April 14, 1962
Vol. 162 — No. 15

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

Don Henderson, left, and Don Hartery, General Tel. Co. of Florida, are splicing a 606-pair underground cable to provide service to about 2000 stations in a housing development in Sarasota. They average about 100 pairs per hour for each man. The end of the reel was reached in the middle of a lawn and while they were busy splicing, the owner took their picture.

Circulation This Issue
14,491 of Which
13,904 Is Paid

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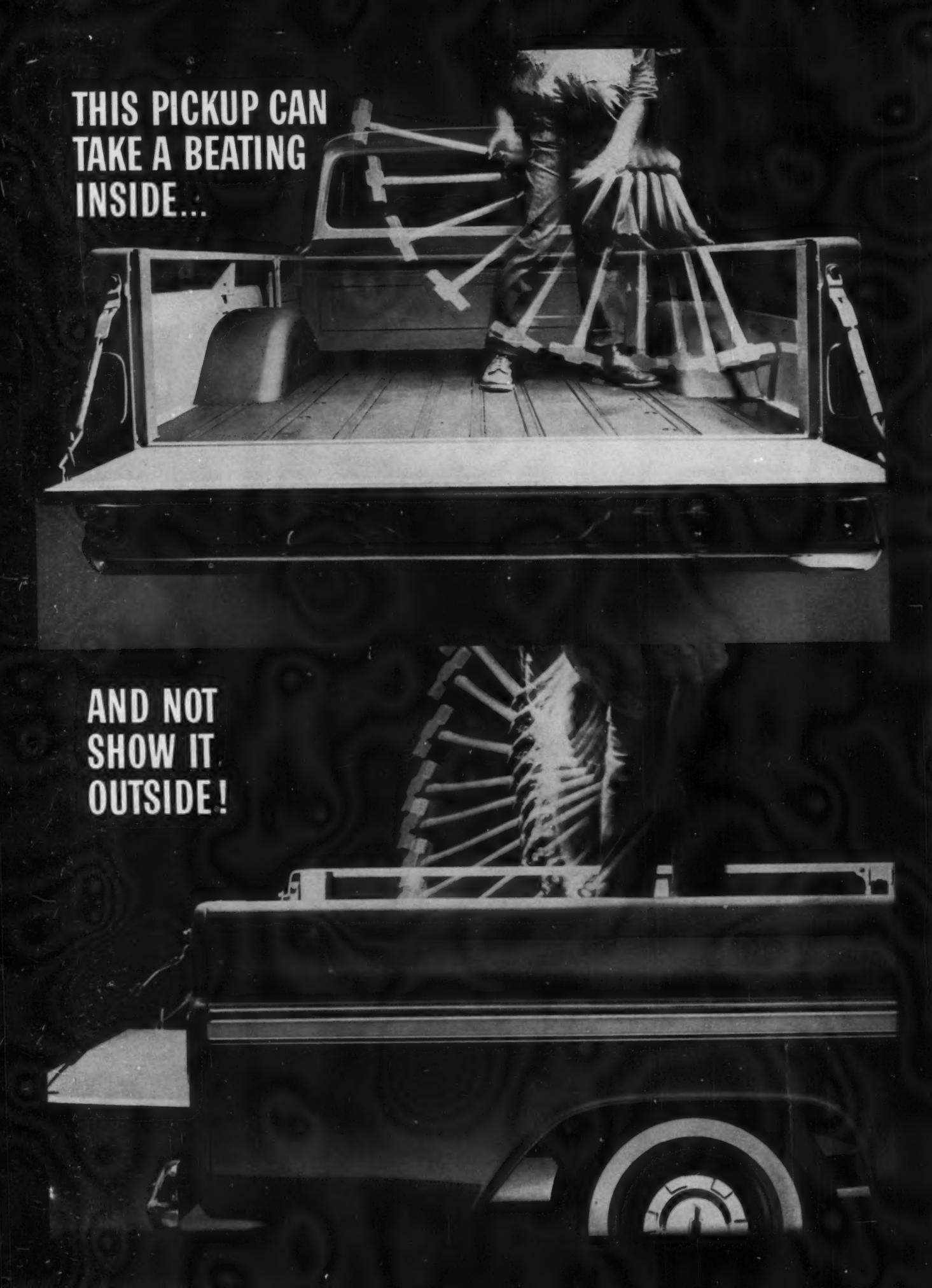
Published every week on Saturday by Telephony Publishing Corp., 305 S. Dearborn St., Chicago 5, Ill. Subscription $4.50 per year. Entered as second class matter at Post office at Chicago, Ill., under the act of Mar. 3, 1879.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TAKE A BEATING
INSIDE...
AND NOT
SHOW IT
OUTSIDE!

...IT'S A DOUBLE-STRONG CHEVROLET

Chevrolet truck quality in action: The man in the pictures at left really *whaled* the inside panel of that Chevy pickup. He used a 16-pound sledge and put his back into it. The result was a whopping dent on the inside of the box. But it didn't mar the exterior appearance one bit.

This demonstrates an advantage of the *double-wall side panel construction* provided in Chevrolet Fleetside pickups. Not only is the body much stronger, but when the inside is nicked or dented by rough loads, the damage doesn't show through. The inside wall acts as a buffer, lets the outside stay looking nice. You don't get this kind of protection with a pickup body that provides only one thickness of sheet metal.

Double-wall side panel construction is just one example of the cost-saving quality you get in a '62 Chevrolet truck. Others are pointed out below.

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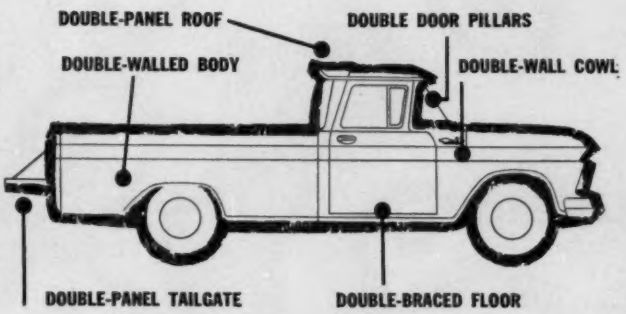

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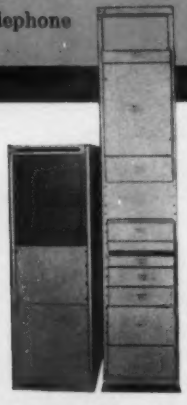

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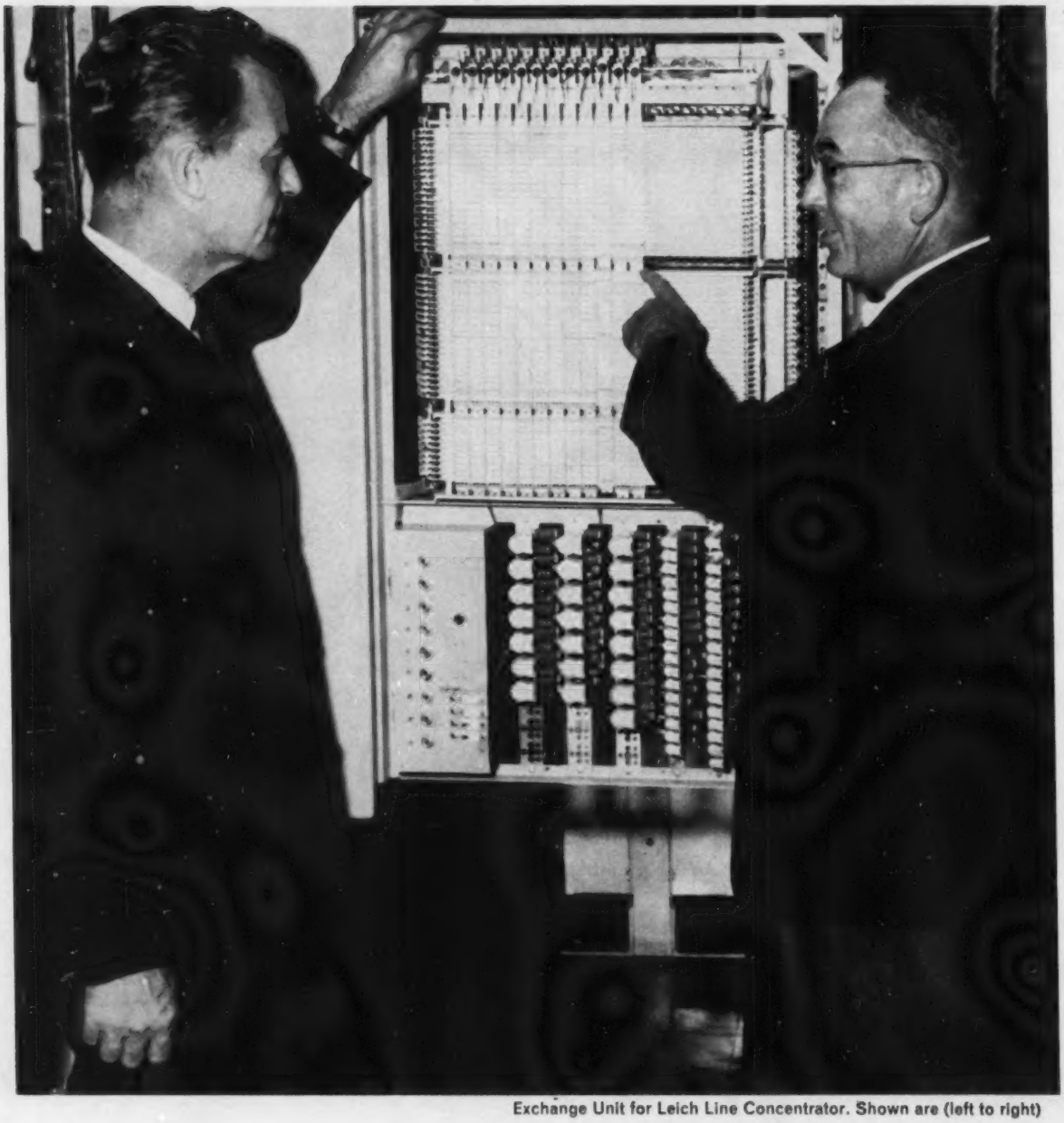

Exchange Unit for Leich Line Concentrator. Shown are (left to right) J. H. Shultz, General Manager and Arthur F. Brubaker, Plant Superintendent, Rochester (Ind.) Telephone Co., Inc.

$12,000
WITH
THE LEICH LINE CONCENTRATOR"

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It used 15 pairs (12 traffic trunks and 3 control trunks) of the existing 26 pair cable to furnish 49 lines—28 in service and 21 available for future growth. Four of the remaining original eleven pairs were used as high usage lines in the area, leaving seven spare pairs. Mr. Brubaker increased his original 26 lines to a total of 60—for a net gain of 34 lines!

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FLASHES AND PLUGS

CHALK ONE UP. Two English schoolboys hated one another with a vengeance. Through the years as they grew, their venomous feelings towards each other also grew.

Both attained prominence. One became an admiral, the other a bishop.

After many years, they met again on a London railroad station platform. Time had taken its toll of both, but especially of the bishop, who had become exceedingly plump. However, they recognized one another.

The bishop swept up to the admiral, whose medals and gold braid blinded the eye, and said:

"Stationmaster, from which platform does the 10:45 train leave for Oxford?"

The admiral promptly replied: "Platform 5, madam. But in your condition, should you be traveling?"

•

HELP! HELP! When one wonders about the diversity of government offices which supply aid of various kinds, it is comforting to note that the average reader, who is bewildered by the lengthy directory of abbreviations is not the only one who is confused.

The "Wall Street Journal" said a man in Dallas, Tex. telephoned Washington, D.C., one day and gave the operator a number that, the writer said, is plainly visible in the Chesapeake & Potomac telephone directory, namely "National 8-2808".

After a wait, the operator came on the line and said, "I'm sorry, sir, but we have no number listed for the National Aid to 808."

•

NO WARNING OF BLITZ. On a snowy Sunday afternoon during the now-famous winter of 1961-62, the Krzyanowski children of Milwaukee, Wis., were becoming restless from being cooped up in the house. Their mother suggested they might like to drive over to their grandparents' for a visit.

Warming to this exciting prospect, Steven, 8, exclaimed, "Swell! Shall we telephone them we're coming, or make it a surprise attack?"

•

WHAT'S IN A NAME? A story circulating about Great Britain's King George V emphasizes that in spite of his being a descendant of the Germanic Wettins of Coburg, he was British to the hilt.

During World War I he changed his surname from Wettin to Windsor to emphasize his distaste for things Germanic.

The Kaiser retaliated. He ordered a performance of "The Merry Wives of Saxe-Coburg."

•

A ROSE BY ANY OTHER NAME . . . Stanley Zyttenfeld got tired of having cranks telephone at all hours because his name was listed last in the Seattle directory. So, in court, he had names of the whole family—himself, his wife, and two children—changed to Enfield.

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

SINCE 1901

April 14, 1962

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Published every week on Saturday by TELEPHONY PUBLISHING CORP., 608 S. Dearborn St., Chicago 5, Ill. Entered as second class matter at the Post Office at Chicago, Ill., under the act of Mar. 3, 1879. 30c per copy (except special issues—50c). Subscription $4.50, 1-year; $7.00, 2-years; $9.00, 3-years. Add $1.00 per year for postage to Canada and Pan American countries; $2.00 per year to Foreign countries. Telephone: 922-2435 (DDD Area Code 312).

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IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
Public Relations Firm.

AT&T stages first simulation test of its Telstar satellite communications experiment for newspaper men. . . . Hogan suggests such a demonstration for congressmen and senators, especially the left wingers who are plugging for government ownership of communications satellites, to show what private enterprise has wrought.

ON APR. 3 American Telephone & Telegraph Co. played host to about 200 newsmen at its 10-million-dollar Andover, Me., earth station for communicating by satellites. As one who had trouble passing high school trigonometry, your Washington editor walked around the installation on the threshold of space with his mouth hanging open. It was a truly memorable and impressive experience.

Your editor could not help wondering why Bell doesn't arrange a similar "open house" for congressmen and senators. If these legislators could see firsthand what free enterprise has wrought, there would be considerably less threat from the left-wingers who are thumping the tub for government ownership and control of communications satellites.

The Bell scientists and technicians staged the first simulation test of the Telstar satellite communications experiment for the newsmen. It went off without a hitch.

Responding accurately to electronic commands, a 340-ton cornucopia antenna "locked in" on a dummy Telstar satellite mounted on a 250-foot tower that stands on the brow of picturesque Black Mountain some five miles south of the radome. When the antenna came into position, Eugene F. O'Neill, Telstar project manager for the Bell Telephone Laboratories, talked easily by telephone—via the satellite—with Robert E. Sageman, coordinating engineer for AT&T. As the two men conversed, they stood in the shadow of the huge antenna, which is housed in the world's largest inflated structure —a white nylon radome almost 18 stories high.

The Bell System technicians and engineers also successfully sent still photos via the satellite. The pictures, taken on the spot, were fed into a high-speed facsimile machine, beamed at the satellite and returned to the earth station. The quality of the pictures was good.

O'Neill explained that the voice and picture signals were sent and received this way:

(1) During the telephone demonstration, Mr. O'Neill spoke first. His voice went from the radome to the station control building—several hundred yards away—over conventional telephone lines. The voice signal underwent frequency changes and was piped back to the antenna where it was amplified and sent to the satellite over radio microwaves.

(2) The satellite received the signal (it is estimated that the signal from an orbiting satellite will be a trillionth of a watt), amplified its strength billions of times and relayed it back to the horn antenna.

(3) The horn antenna scooped up the signal and shot it back to the control building. There, the signal again went through a frequency change, making it intelligible to the human ear.

(4) Finally, the signal was carried from the control building to Mr. Sageman's telephone.

When Mr. Sageman spoke, the process—which was instantaneous—was reversed.

When AT&T moved into the Andover area, the local telephone exchange had a total of 27 stations on its lines. When asked why such a remote location in Maine was chosen for the site, it was explained that three reasons motivated Bell to establish the installations in the woods near Andover: (1) Remoteness from its own microwave stations; (2) closeness to Europe, and (3) the natural protective terrain of the site.

Late this spring, the National Aeronautics and Space Administration (NASA) is scheduled to launch the Bell System's Telstar satellite into orbit from Cape Canaveral at estimated charge to AT&T of 3 million dollars. The orbit is expected to range in altitude between 600 and 3,500 miles. Another "active" satellite, NASA's Relay, will be launched late this summer into an elliptical orbit ranging from about 700 to 3,000 miles. When a satellite is "visible" to the station at Andover, experimental communications will follow the process demonstrated for the newsmen. The satellites will also be able to relay signals to and from other ground stations in the U. S. and other countries.

Bell expects to have the system commercially operable by 1965 with 20-30 satellites in orbit when its estimated overseas calls will total eight million. Within the next 10 years, it is anticipated that 10,000 overseas circuits will be needed, compared with 600 now.

Scientists and engineers seem to have licked the technical difficulties posed by communications satellites even though the politicians are still

arguing about who will own and control the system.

Kefauver Quiz Opens

Sen. Estes Kefauver, (D., Tenn.), chairman of the Senate Anti-trust Sub-committee, opened hearings on the space bill which were designed to stall establishment of a privately-owned satellite communications system. The hearings are more or less the sounding board for advocates of government ownership and control.

The maneuver by Kefauver is not expected to delay Senate consideration and approval of the compromise bill reported out by Senator Kerr's Senate Space Committee. The general feeling on Capitol Hill and in the administration is that the bill was a reasonable compromise. There is little support for the government ownership proposal of Kefauver and others of similar bent.

As reported previously, the Senate Space Committee bill provides for a communications satellite corporation with half of the stock owned by the communications industry and half by the public.

Sen. Everett M. Dirksen (R., Ill.), ranking minority member of Kefauver's committee, voiced the view prevalent in Washington when he questioned the committee's jurisdiction in the satellite communications matter. Kefauver was undeterred. Sen. Ralph W. Yarborough (D., Tex.), who thinks government ownership of the system would liquidate the national debt, said that if the corporation "is turned over to a private monopoly, it will constitute the biggest giveaway in the history of the United States."

Rep. Emanuel Celler (D., N. Y.) told the committee that he rebelled against the idea of "private ownership where the control and destiny of the system would be the means of lining the pockets of a select group of companies." Celler suggested that the Senate Space Committee bill be revised to provide wider public participation in the stock. He feels the bill would hand over too much control to the big communications carriers. Celler said taxpayers have poured more than 25 billion dollars into Government space developments and the fruits of this tax-financed research would be exploited by a private satellite firm. "I do not believe," he declared, "we should place the American taxpayers in the position of being the fools who have prepared a feast for a wise man to eat."

In an amazingly incongruous statement before the committee, Sen. Wayne Morse (D., Ore.) urged liberals to "get off their seats" and *defend the free enterprise system* against plans to let a profit-making, government-regulated monopoly own world wide space communications. "The time has come for the liberals to come off their seats and rally to the defense of private enterprise," he said. "You don't strengthen free enterprise by creating a monopoly."

He promised to take part in a national campaign to alert Americans to what he called the certainty that business "big boys" would dominate any privately-owned system of communications satellites. He said the President was making a great mistake by urging prompt passage of a bill to set up a satellite-owning private corporation. He hinted at one of his famous Senate filibusters to block private ownership.

Philip J. Farley, Special Assistant to Secretary of State Rusk for Outer Space, said the compromise bill would give the government ample authority to make sure that the satellite-owning monopoly behaved in the national interest. He said if the monopoly corporation refused to extend service to poor, underdeveloped nations in line with foreign policy objectives, the government could compel it to do so.

Little opposition for the bill is expected in either house.

Brazilian Telephone Grab Feud

An intramural dispute has grown out of the seizure of the Canadian-owned Rio de Janeiro telephone system by the Brazilian State of Guanabara which was reported in this department last week.

A few days after announcement of the expropriation by Guanabara State President Lacerda, the Brazilian federal government sent army troops to take over the company and prevent its use by state officials. Shortly after Lacerda's announcement, Brazilian President Goulart, preparing for his state visit to Washington, prohibited expropriation and seizure of any telephone company engaging in interstate service without prior approval by the Brazilian National Security Council.

This move was apparently designed to minimize his "embarrassment" before his trip to Washington looking for handouts. Lacerda charged that he seized the telephone company to prevent the Brazilian federal government from buying it. He claimed that during Goulart's visit to the United States, he planned to negotiate a loan and use part of the money for expropriation of the telephone company.

It is common knowledge in Washington that Brazil plans to seize all telephone and electric utilities and our state department regards this as an inevitable development by Latin Americans to nationalize utilities. It is assumed by insiders that this was one of the topics discussed by President Kennedy and President Goulart while he was in Washington. This country's position is reportedly not to oppose such seizures but to agree upon adequate compensation for the American-owned utilities affected.

International Telephone & Telegraph Co., victim of a seizure by the Brazilian State of Rio Grande do Sul a few weeks ago, has reported that it has been unable to reach an agreement on adequate compensation for its property and facilities. It seemed to point the blame for this condition on the Brazilian federal government.

It is difficult to see, therefore, how the State Department and President Kennedy can expect fair treatment for American-owned companies in future negotiations.

The crux of the problem appears to be that the companies are unable to raise rates which would make it economically feasible to improve services. Brazil's solution to the problem is government ownership and control. Since so many in Washington espouse the same philosophy, it is not surprising that these seizures have not been opposed.

Meanwhile, President Goulart's visit to Washington was highly successful —from his standpoint. He reportedly went home with commitments for 276 million dollars in aid for development of projects in Brazil.

President Appears Weary

During Jackie Kennedy's highly successful and much rebroadcast television tour of the White House, she showed a series of photographs progressively showing the strain which was clearly evident in the face of Abraham Lincoln as the high office took its toll. Your editor recalls a similar series of photographs of Franklin D. Roosevelt. We predict that in 1964 such photographs will demonstrate similar changes in the young man now occupying the White House.

While the President was conducting his press conference on Mar. 29, we noted the apparent weariness of Mr. Kennedy after little more than a year in office. His responsibilities are awesome and one must marvel at his grasp of detail about a wide variety of important issues, but he seems to have lost some of the sparkle and lightheartedness which he demonstrated during the grueling campaign and his first months in office.

This weariness must have been noted by other observers because at one point in the press conference the President was asked, "Mr. President, your

(Continued on page 44)

ABOUT SPACE COMMUNICATIONS

By RALPH O. BECK*

PART III

Proposed space communication legislation before the Congress falls into three broad categories. First, those measures advocating carrier ownership which most closely parallel the recommendations of the FCC *Ad Hoc* Carrier Committee. Second, variations advocating another type of private ownership but with additional governmental controls. The best example of this is the "Administration Bill." And third, outright government ownership and operation of a U. S. space satellite corporation.

As this article is being written, two significant developments are occurring in the legislative field. The Senate Committee on Aeronautical and Space Sciences has completed hearings on bills that fall into the first two categories. Chaired by Sen. Robert Kerr (D., Okla.), this committee reported out a so-called "Compromise Bill" during the week ending Mar. 31. The attitude of this committee and its support is highly significant as it is one of the most powerful committees in the Senate.

The second item of interest is the hearings currently being conducted by Sen. Estes Kefauver (D., Tenn.), chairman of the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary. S. 2890 is being considered by this subcommittee which is a bill introduced by Senator Kefauver and others. The bill advocates government ownership and operation of the U. S. portion of a space satellite communication system.

Interest to Telephone Industry

The question can be asked—of what interest is the subject of space satellite communication legislation to the responsible person in the communication field? Or perhaps more directly—of what interest should such legislation be to the telephone industry, particularly the independent companies? When considering such questions, it should be borne in mind that current legislative discussions are concerned with the type of organization of a proposed U. S. space satellite corporation. None of the legislation pertains to the technical characteristics of a space satellite system.

There are those within the industry who harbor the notion that this current congressional struggle is of interest only to the so-called international carriers of the U. S. Such a concept undoubtedly stems from the original composition of the FCC *Ad Hoc* Carrier Committee since its members were drawn from companies classified by that agency as "international carriers." The *Ad Hoc* Committee, however, unanimously agreed and stated in its report with respect to ownership of the satellites that "such ownership would be opened to any United States carrier authorized by the commission to furnish communications services via the satellites." By commission, of course, was meant the FCC. This agreement was easily reached as it was apparent that space satellite communication was a method that could supplement existing long distance domestic traffic.

Space satellite communication may become a factor in handling long distance traffic within the borders of the U. S. The exact distance that space satellite communication will be useful in domestic traffic will largely depend upon (1) the technical characteristics and (2) the economics of the system. Traffic likely will be routed by space satellite if it is cheaper to do so.

Thus while the international carriers will find an immediate use for space satellite communications for overseas traffic, certain domestic carriers may be affected ultimately.

Extent of Overseas Traffic

All U. S. communication carriers will be affected to the extent that they share in present overseas traffic or such future traffic as may be routed by space satellite. Thus, the charges for such services, the divisions of those charges among carriers as well as the interconnection between satellite and other facilities, are important to all U. S. communication carriers. It should be pointed out, one of the policies of the present Administration is that the economic benefits of a space satellite system should be reflected in the overseas communication rates. Industry representatives have again and again described the use of space satellite communications as being just another means for the transmission of long distance traffic. As an example, the following statement is found in the *Ad Hoc* Carrier report: "Communications satellites, as microwave relays in space, will provide the long-distance transmissions of microwave frequencies that are necessary for greatly increased communications capacity and for point-to-point television transmission services. Satellite systems will be additions rather than replacements for present and future long-distance communications facilities, such as submarine cables and high-frequency radio circuits. They will afford highly desirable alternate communications routes."

Continuing to quote the *Ad Hoc* report on this subject, "Satellite systems must be technically and operationally integrated in an orderly manner into present communications systems to provide rapid and efficient worldwide service at reasonable charges to the public."

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*This is the third of a series of articles by Mr. Beck, who is Vice President of Hawaiian Telephone Co. of Honolulu. He represented his company on the FCC Ad Hoc Carrier Committee, composed of 10 U.S. international common carriers, to study establishment of satellite communications system.

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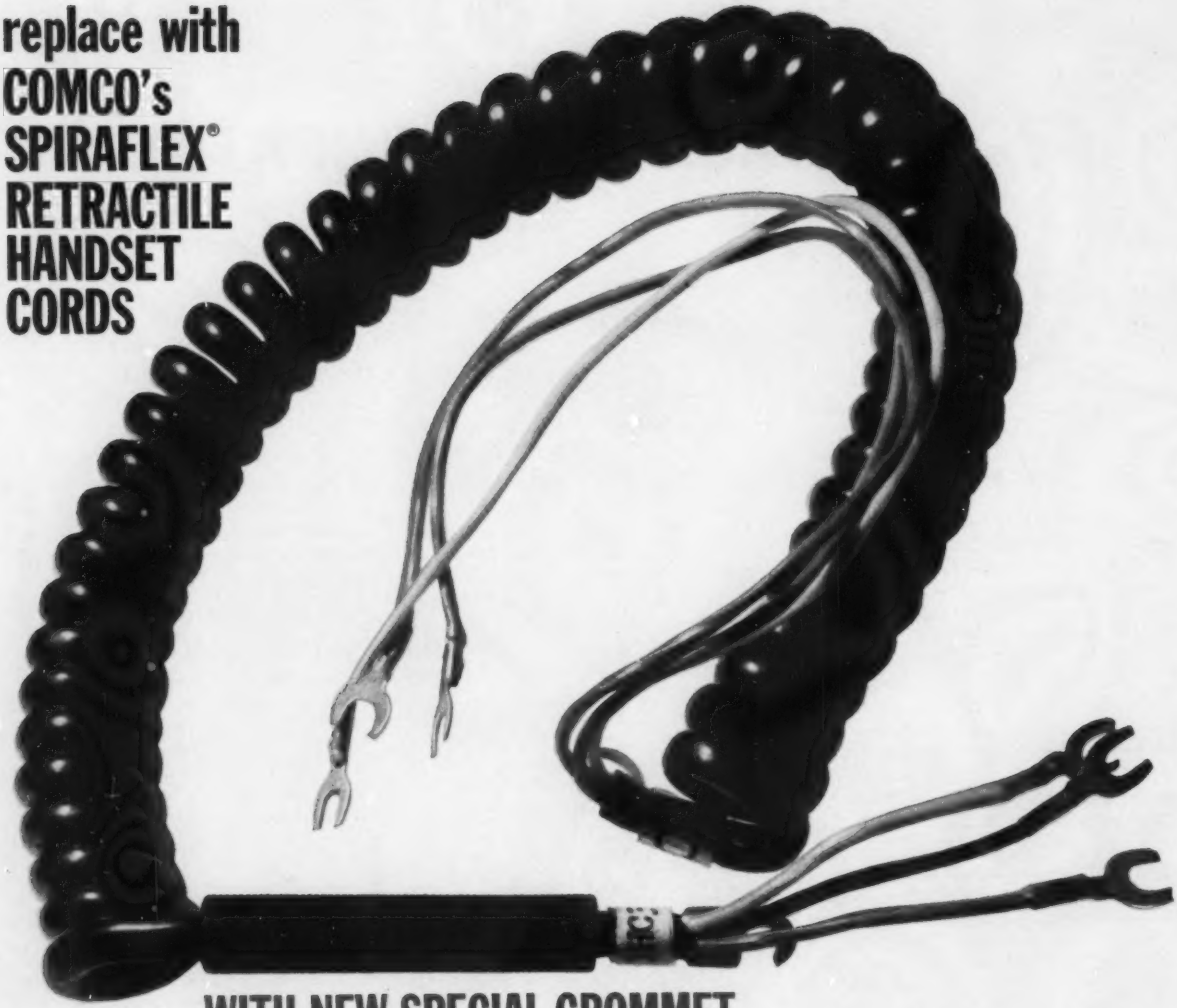


WITH NEW SPECIAL GROMMET.

The highly efficient grommet at the handset end of Spiraflex replacement cords prevents short-bending of the cord to insure long, noise-free performance. Spiraflex replacements are 3/C with miniature tinsel, PVC insulation, and are smaller diameter than the cords they replace. They are available in black or colors, to match any handset. ☐ Remember COMCO—foremost family of fine replacement cords...telephone, switchboard, operators...fast delivery of any quantity. Distributed and stocked nationally by Automatic Electric Sales Corp., Northlake, Ill.

COMMERCIAL CORD COMPANY

CLIFTON SPRINGS, N.Y. ☐ a division of General Cable Corporation

FCC Chairman Newton N. Minow, as a government representative, stated before the House Committee on Interstate and Foreign Commerce, Mar. 14, 1962: "Communication via satellite, though a new technology, is essentially but another means of relaying long-distance communications. It will perform much the same function as do existing cable and radio facilities of our common carriers. Under no circumstances should it replace existing facilities, which must be maintained by these carriers to afford diversification of facilities and routing needed to guarantee continuity and security of service under all conditions between the U. S. and overseas points. Thus, from a service standpoint, the utilization of satellite facilities by any common carrier will require technical and operational coordination and integration of those facilities with its existing facilities."

James E. Dingman, executive vice-president of the American Telephone & Telegraph Co., stated it this way when discussing a satellite communication system before the Senate Aeronautical and Space Sciences Committee, Mar. 6, 1962:

"It would provide added security and reliability, both by making available alternate routes and by affording direct access to those areas which are now reached only by either high frequency radio, which is subject to sunspot interference, or by intermediate landline links through other countries."

Salient Points of the Amended Kerr Bill

(S-2814)

A privately owned space satellite corporation.

One class of stock—divided equally between communication carriers and the general public.

Stock will be issued at a price not more than $100 per share.

Fifteen directors—six elected by the carriers, six elected by public stockholders, three appointed by the President.

Stock purchased by carriers not to be included in their rate base.

Non-voting securities, bonds, debentures may be included in rate base for international communication services only.

A non-carrier stockholder may own not more than 10 per cent of the voting shares of the corporation.

The State Department "shall advise the corporation of relevant foreign policy consideration" when notified by the corporation of impending negotiations with an international or foreign entity. The corporation may request assistance from the State Department in such negotiations.

The President shall "exercise such general supervision over relations of the corporation with foreign governments or entities or with international bodies as may be appropriate to insure that such relations shall be consistent with the national interest or foreign policy of the U.S."

The National Aeronautics & Space Administration would advise the FCC on technical characteristics of the system with the FCC having authority to approve technical characteristics of the system employed by the corporation and by the ground stations.

Ownership of the ground stations would be determined by the FCC which would be authorized to license either the corporation or the communications common carriers to establish and maintain, either jointly or separately, the ground stations.

The FCC shall encourage the establishment and maintenance of ground stations by common carriers wherever, in the judgment of the FCC, such would not be inconsistent with the policies of this title. (The Compromise Bill).

Evolutionary Not Revolutionary

He went on to say that "satellites will be evolutionary, not revolutionary, in character. They will not constitute a communications system in themselves but will merely serve as an intermediate link in a system that provides complete communications service. The degree of their usefulness in providing communications services will depend upon their proper integration, on an economically sound and operationally efficient basis, in the vast complex of domestic and international common carrier facilities."

The U. S. has the finest communication system in the history of the world. And that system is of course owned and operated by private U. S. carriers. However, Sen. Wayne Morse (D., Ore.) made this statement, Mar 30, 1962, before the Subcommittee on Antitrust and Monopoly Legislation of the Senate Committee on the Judiciary: "The experience of the private communications companies in long distance communication is not indispensable to create a viable satellite communications system. Indeed, the Army, Navy, and Air Force have the most experience in World-wide communication systems. The satellite system will not be merely an extension of present communications facilities, a mere cable in the skies. It is a unique new development with unimaginable possibilities of all kinds, and with the widest political, social and economic implications for the entire world. The communications companies' experience is of little significance in these areas."

In view of such expressions as those of Senator Morse, the privately owned and operated communication system in the U. S. should indeed be gratified about President Kennedy's convictions regarding private ownership of a space satellite communication system as well as the apparent views of Senator Kerr, Chairman of the Senate Aeronautical and Space Sciences Committee, and Rep. Harris, Chairman of the House Interstate and Foreign Commerce Committee. In a statement about space satellite communications issued by the White House, July 24, 1961, President Kennedy stated: "Private ownership and operation of the U. S. portion of the system is favored, provided that such ownership and operation meet the following policy requirements:

"(1) New and expanded international communications services be made available at the earliest practicable date;

"(2) Make the system global in coverage so as to provide efficient communication service throughout the whole world as soon as technically feasible, including service where individual portions of the coverage are not profitable:

"(3) Provide opportunities for foreign participation through ownership or otherwise, in the communication satellite system;

"(4) Nondiscriminatory use of and equitable access to the system by present and future authorized communications carriers;

"(5) Effective competition, such as competitive bidding, in the acquisition of equipment used in the system;

"(6) Structure of ownership or control which will assure maximum possible competition;

"(7) Full compliance with antitrust

(Continued on page 47)

Need Fastest Delivery?

CALL COLLINS

Collins MX-106 Transistorized Carrier provides up to 600 toll-quality voice channels, saving up to 80% in space and 90% in power consumption.

The call: Recently a customer called Collins for 1,560 channel ends of MX-106 Transistorized Carrier. *Delivered:* Within 90 days! Whatever your communication requirements — early in-service date or special capability — take advantage of Collins volume production of the industry's *broadest microwave and carrier product line.* □ If your operation calls for fast delivery of quality equipment, call Collins . . . Dallas, area code 214, ADams 5-2331. Collins Radio Company, Dallas, Texas.

COLLINS

MIND YOUR OWN BUSINESS

Here's a personal file of stimulating ideas; little known facts and problem solvers

By TED POLLOCK

HOW TO PROFIT FROM A MISTAKE. "If you've never made a mistake," said George Ade, "lie down. You're dead."

The humorist was quite right. Everybody makes mistakes. But only a few have managed to cash in on their errors.

How? By *learning* from them. By examining what went wrong and why, then using their new knowledge to best advantage.

Want to turn your own next "lemon" into lemonade? Try this three-point program.

1) *Adopt the proper attitude.* Recognize that failure is not the end of the world. Rather, it is a stern—but excellent—teacher, one from whom you can learn invaluable lessons.

2) *Analyze your mistake.* Never ignore failure. Study it to determine its cause. What, exactly, was the error? How was it made? Can it be prevented from recurring? Was it due to misjudgment? Imperfect planning? Inadequate implementation? What? Questions like these will help you pinpoint the weakness within yourself—or your organization—that is responsible for the mistake. Thus, upon examination, you may find that the cause of the error was your tendency to jump to conclusions . . . rely on others too little (or too much) . . . misinterpret certain facts . . . simple carelessness . . . poor communications.

3) *Take appropriate steps to avoid repeating the mistake.* When you have satisfied yourself that you know all the reasons for failure, you are ready to take the next step. This is insurance that the error, or similar ones, will not occur. If possible, set up a procedure or adopt a policy that guarantees permanent elimination of the trouble. For example, if you have found that the cause of your mistake was acting upon too little information, you can take steps to assure yourself of sufficient information in the future. If the error was due to an employe's misunderstanding, you can improve future communications with him. In general, *the reason for the mistake will dictate the action to be taken.*

The important rule is this: errors should never be ignored. If they are, they will only be repeated—or, worse, grow larger. No matter what the mistake is, whatever the circumstances affecting it, the failure must be subjected to the same painstaking analysis that precedes any decision.

It is no crime to make a mistake. It is a felony not to learn from it.

Three Telephone Calls Travelers Should Make

Whether it's just an overnight jaunt or a trans-continental journey, your trip will run more smoothly if you remember to make three calls as soon as you get settled in your hotel. These are to:

1. The person expecting you. Let him know you've arrived so that he may apprise you of your schedule, any changes in plan, new developments.

2. Home. So your family will know you're safe and sound. So that your wife can give you any last-minute information. For your own morale.

3. Reconfirm reservations. If yours is a multi-stop trip, you'll want to know that the next leg of your journey is assured. If you have but to return home, it's still smart to make sure that the space you're counting on is yours. A quick call to the airport or train terminal can save delays, misunderstandings, grief all around.

HOW TO REMEMBER THAT NAME. You should, you know. It's a definite business and professional asset, for next to his immediate family, a man sets the grestest store by his name. It's him and, for better or worse, it's taken him a lifetime to earn the luster on it. The least you can do is use it correctly in his presence.

If "the face is familiar," but you frequently can't place the name, try the following techniques to better your name recall. Next time you're introduced to somebody—

• *Get the name clearly.* Forget about looking the person over or what you are going to say until you have the full name soundly engraved in your mind. Don't worry about hurting the other person's feelings. If his name is

unusual, ask about pronunciation or spelling.

• *Use the name at once in reply.* "How do you do, Mr. Thistlewhistle." Your new acquaintance can correct you if you've mispronounced his name.

• *Repeat the name as you converse.* Each repetition fixes the name more firmly in your mind.

• *Write the name down as soon as you can.* Spelling it out fixes the name more firmly in your mind. Mentally re-reading it helps pronunciation. Carry a small notebook for this task. Use a scrap of paper if necessary.

THE LOSS-PROOF WAY TO INDORSE CHECKS.

1. Indorse all checks for deposit with a "special" indorsement reading: "FOR DEPOSIT ONLY TO THE ACCOUNT OF. . . ." Sign your name underneath (unless you use a rubber stamp with the complete indorsement, including your name).

2. Indorse checks for deposit as soon as received. When indorsed as above, they cannot be cashed by anybody else if they are lost or stolen.

3. If you are going to cash a check, take it to the bank at once and don't indorse it until you are in the bank. Then sign your name on the back exactly as it is written on the front. This is known as a "blank" indorsement and should be used only when you are *in the bank.*

4. If you want to indorse a check so that only a specific individual or firm can cash it, use a "special" indorsement like this: "PAY TO THE ORDER OF_____." Then sign your name directly below this.

QUESTIONS AND ANSWERS ON SOCIAL SECURITY. President Kennedy recently signed the 1961 Amendments to the Social Security Law—changes that may affect you and your family. The most important points, herewith:

Q. *To whom are the 1961 amendments to the social security law important?*

A. To millions of Americans who will get more in benefits and to many who will be able to get payments for the first time.

Q. *Can men retire at age 62 and draw social security benefits?*

A. Yes. Men who retire at 62 or later can now get social security retirement benefits just as women can at a reduced rate.

Q. *Will men get as much in their monthly checks as if they retire at 65?*

A. No. If they file at age 62, the benefits will be slightly less—about 80% of the benefits they would receive at 65.

Q. *Will the reduced benefits paid to men at age 62 go up as soon as they reach 65?*

A. Not in most cases. Once the reduced rate is taken, the benefits stay the same even after they reach 65.

Q. *What is the so-called "one-in-four" provision?*

A. This change means that most people can become insured more quickly. A person is fully insured if he has credit for one quarter of coverage (whenever acquired) for each year elapsing after 1950.

Q. *The minimum social security benefit was $33. Does the amendment provide for an increase?*

A. Those people now getting the minimum social security benefit, $33 per month, will receive the new minimum of $40 per month. The raise will be automatic.

THE RIGHT WAY TO ANSWER A BUSINESS LETTER. Communications are the lifeblood of our workaday world. And of all the varied forms that communications can take, the written word is perhaps the most abused. Nowhere is this more apparent than in the business reply letter.

The vast majority of such letters are dull, cliche-ridden and frequently fail their task—to answer another human being. How can you improve your own written replies? Some suggestions:

Read your correspondent's letter carefully. Study it. If necessary, note important points in the margin. What, precisely, does he want? Information? Instructions? An opinion? If he is seeking information, don't give him an opinion. If he is asking for an opinion, don't send him instructions. Common sense? Amazingly, relatively few people bother to read carefully the letters they must answer. Result: prolonged correspondence, wasted time, irritation for all concerned.

Write a friendly letter. Your major stock in trade is friendliness. Try to make this attitude apparent in your reply. As you write, think of the recipient as a friend. This attitude creates a better impression with your reader and, most important, places him in a receptive frame of mind.

Decide on your major theme. Unless your correspondent is an old acquaintance, he won't particularly be interested by an over-long, chatty letter. Stick to the point. The best business letter is one that is developed along one major theme. Once you decide on your keynote idea, visualize how you will deliver it to your reader so that he will agree with you. An excellent method of doing this is to put yourself in his shoes, then ask yourself, "What benefit do I get out of it?"

Collect your data. This data should bolster your theme, be pertinent to the matter at hand, prove your case. Remember—anything that distracts your reader works against you. We all have only a limited amount of mental power available at any given moment and our brains can only deal effectively with one matter at a time.

Write it! Few things are more annoying than waiting for a reply to a letter. Therefore, unless special circumstances dictate otherwise, try to answer a business letter within 48 hours. It not only makes a good impression on the recipient; it keeps your desk cleared for action.

Caution: When You're a Co-Maker . . .

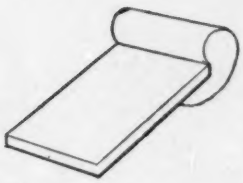
Acting as a co-maker on a loan means exactly what it says—you're as responsible for the loan's payment as the "maker" (borrower). If the borrower doesn't pay, the co-maker must.

In some cases, banks do not have to wait for the borrower to default before trying to collect from a co-maker. They can usually demand immediate payment from the co-maker if they learn the borrower gave misinformation in getting the loan, or if their position as the lender is weakened by something that happens to the borrower, such as loss of a job. Such demands for immediate payment are not the rule, but banks can legally make them.

Signing as a co-maker also affects your own ability to borrow. As far as any bank or credit manager is concerned, being a co-maker is the same as being a borrower yourself. It "uses up" part of your normal credit limits. In other words, assuming co-maker obligations can mean that you will be unable to get a loan when you need the cash.

The word: caution.

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

The globe-girdling communications network in Pan American World Airways' Panamac system is the most extensive yet designed for commercial transmission of data to and from a data processing center.

This world-wide IBM tele-processing system will provide Pan Am reservations personnel, scattered across six continents, with access to a vast electronic information processor in the airline's home office in the new Pan Am Building in New York City.

This system, with hundreds of terminals and communication control units, will flash reservations transactions and operational and administrative messages from remote locations to the data processing center and back in a matter of seconds.

At the nerve ends of the system will be two types of terminals—IBM reservation sets and common carrier units. The reservation sets will process transactions in many cities served by the airline, while the conventional transmission equipment will be used elsewhere in the system.

Buffering units, called terminal interchanges, located at points around the globe where message volume is heaviest will concentrate traffic for delivery to the data processing center in New York.

Overseas points with heavy message traffic—London, San Juan and Honolulu—will each have two interchanges.

The routes taken by a message depend upon available communications lines. A reservation request originating in Port of Spain, for example, would be transmitted via radio to a terminal interchange in San Juan. From San Juan, the message is flashed at high speed, via submarine cable and voice-grade land line, to New York.

Even though separated by hundreds or thousands of miles, Pan Am employes—such as Brenda Lawson, shown above—can make use of computers in the New York data processing center as if they were in the same room, as symbolized in this photo. By pressing several keys, reservations personnel can in seconds determine space availability on a flight and secure a reservation for a customer. Pertinent passenger information is entered into the system via the IBM reservations set keyboard and is retained on magnetic disk files (one is at right) at the computing center.

Outlying locations which may experience communications breakdowns due to local conditions are provided with alternate routes. If communication with a distant point is completely interrupted, the computer can store all messages intended for that terminal until communication is restored.

The system also contains powerful error-detecting capability which protects messages sent over the high-speed circuits. It also contains facilities for the automatic retransmission of messages.

•

The Michigan Bell is currently experimenting with a helicopter for inspecting telephone lines. This test is being conducted along a 200-mile section of line, mostly along railroad tracks and through heavily-wooded areas. This trial to date has proved effective in two ways—reduction in costs of inspection and effecting a more rapid restoration of damaged plant.

Previously, it has been necessary to hire railroad men to operate a hand-car-type vehicle for inspection trips by telephone repairmen. With the rented "chopper", the repairman, equipped with pocket tools, climbers and safety belts, can take to the sky for the routine inspection trip. Time-wise the helicopter permits the inspection job to be completed in a matter of hours as compared to weeks for the land-based method.

When a repairman on an inspection tour sees that lines or equipment need minor repair, the 'copter can set him down handily on the railroad tracks. If other non-urgent repairs are spotted, the repairman records the location and a landbased crew repairs it later. However, if a big repair job needs immediate attention, especially after a storm, the 'copter can radio all particulars back to the company headquarters.

"CROSS TALK"

Confidence is defined as the feeling you have before you fully understand the problem.

Extension of Personality

Good Report Reflects Ability of Writer

By JOHN NEURAUTER*

Your reports provide a portion of the information your boss needs to help him answer the questions, "How are we doing?"; and, "What shall we do next?" There are a number of procedures that you can follow to keep your sheets on a supervisor's desk and out of his waste basket. You can increase your usefulness and improve your status by perfecting your report style.

Introductions

Your boss and the proverbial horse probably have a lot in common. You can put a report on his desk, but you can't make him read it. Most reports aren't read; not completely. Busy bosses don't have the time. Usually they will scan the first few paragraphs for the theme and the promise of what you have to say. They may search the end, hoping to find a summary and your conclusions. A favorable impression can make them read the whole thing. With bosses in mind, it is often wise to label the first few paragraphs: Introduction. Do the same for your Summary.

A TV audience must be captured by the first 15 seconds of a show, as producers know. That is why you often see a flash of action before the show starts. The same trick will work on report readers. If your boss isn't hooked with your first few lines, you may lose him to "another channel." Use your introduction to capture the reader's imagination, spell out the situation, and to give some hint of what you intend to do about it.

A good report is prepared in a systematic manner. A dashing start is dandy, but you must see your product in its final form before you can decide upon the best way to sell it. That is why the introduction is the last part of your report to be written. It is always a sales pitch for the ideas that you want to sell. A logical sequence for report writing is: (1) research, (2) an outline, (3) your rough draft, (4) the final draft, (5) the summary, (6) the introduction.

Research

Wise men are never too proud to do research. The occasional writer too often feels that a trip to the library is an admission of ignorance. The experienced writer knows that one misquoted statement or unintentionally misrepresented statistic may cast doubt on the entire report. No one ever has all of the facts at his finger tips. You can do a better writing job when you are sure of what you are writing about.

A common pocket notebook can be your most valuable research tool. The human head usually is not the best storage place for accurate information. W. Ross Ashby, in his book, "Design for a Brain", debunks the idea that the mind is an orderly filing cabinet. He implies that what we have in our heads is literally stored all over the place; with eye, ear and touch-received experiences held in the brain "circuits" of the receiving senses until they are needed.

A memory demand will trigger a near-frantic search for the scattered bits of information. The degree of success of the searching apparatus will determine the quality of the thought. Small wonder memories sometimes fail. Scientists have estimated that 15 billion "cross connects" are necessary to coordinate the interacting portions of the mind, and that a 35-year-old man has probably been exposed to more than 7 trillion separate bits of information.

Always make notes. Never leave it to memory.

A logbook will be useful if your report is technical or if you need information in chronological order. It can be used to preserve data and ideas that could be lost if left to memory.

Research Sources

Company records, operating practices, and drawing files are tools that are so familiar that they are too often not used. Don't forget your reference books and the library. A desk drawer file of pertinent newspaper clippings and timely magazine articles also can be helpful.

Don't be bashful about consulting people who are recognized experts, and always be sure to give them credit when you quote them. It is more than a matter of honesty. Their words can give the weight of authority to what you have to say.

Talking over your ideas with associates can give you a preview of what other people think of your line of reasoning. You can use their comments to help you predict how your reader will react.

To save time, it is a good idea to map your plan of attack. A list of the sources of information that you intend to use, in the order that you intend to consult them, will result in orderly, systematic research.

Outlines and Rough Drafts

Design your outline as a framework upon which you can build. Report outlines don't have to be formal. An informal list will work just as well.

Here is the outline worked up on a report about hunters and telephone insulators:

What: Broken insulators due to hunters is getting progressively worse. Statistics: (checked old trouble reports for gunshot damage entries) 1955...5 cases, '57...13, '59...22, '60...40

Why: Good hunting along Prairie City-Phillipsburg section.

Proximity to new Prairie City suburbs. A few thoughtless hunters.

Action Taken:

Enter copy of note sent to subscribers. Quote "thanks for the warning" bit from a letter.

Give layout and description of warning signs. (will stay bright for a year or more, tested 'em first, won't hang up on climbers) Placed 50 signs at hunter parking spots and good viewing places.

Results: No gunshot damage so far this month, but 15 of our signs have bullet holes.

An outline will organize what you have to say and start you thinking about how you want to present it. Because your oultine will shape the form of your final draft, get your thoughts down in logical sequence.

(Continued on page 48)

*Mr. Neurauter is an electronic engineer working on missile projects. He is a former engineer with the Long Lines Department of American Telephone & Telegraph Co.

THE TRAFFIC PAGE

By WINNIE BURNETT

Let's plan for and talk about our good friends, the Community Dial Office (CDO) customers.

The operator office has a definite obligation to the CDO's it serves. This obligation is to render a satisfactory grade of service and to maintain this grade of service for CDO customers. The service considerations differ very slightly from those applied to larger dial offices and are of utmost importance.

IT IS PARTICULARLY important that friendly, pleasant service be given, since the home-town operators have been supplanted by dial equipment. At least that is the way the CDO customer may feel, unless we convince him that he still is served by "his" operators.

Of course, the attitude of the CDO subscribers is greatly affected by the way they have been "prepared" for this new service by pre-cut-over activities and planning. Good planning, good engineering and a pre-cut-over customer information program can pave the way for a welcomed and successful conversion.

THERE ARE several contributing factors to be considered in planning pre-cut-over customer instruction. Some major items are: Location and size of the office; type of conversion; familiarity of customers with dialing; characteristics of town, i.e. primary nationality, industry potential, etc. And there are many other things to be considered.

In a CDO, as in other offices, the objectives are to achieve the maximum use of equipment and to maintain a satisfactory grade of service. Dial equipment is quite costly, so we must gain the most effective use of it—still rendering good service. One important necessity traffic-wise, to gain effective utilization *initially*, is through customer dialing instructions. Some towns will require almost no instructions and some will require almost person-by-person contacts. This depends, of course, upon the knowledge the telephone users have of dialing.

A WELL-PLANNED customer instruction program might include:

(1) Premise visits by customer instructors.
(2) Demonstration equipment.
(3) Publicity—public talks, films, newspapers, radio and TV, etc.
(4) Telephone visits—chief operator.

The customer instructions should include dialing instructions on dialing local numbers, Extended Area Service, Direct Distance Dialing (if customer DDD), and all auxiliary operator services. Also, the customers must understand where their operators are located and how to reach emergency services.

DIAL SERVICE is really a revolutionary change for many towns. Townspeople may have had little or no experience with dialing. The impersonal machine service on local calls versus the friendly, often garrulous, operator service they have been used to, may cause resentment. Everyone in the operator office must realize what the CDO means to the community it serves. Expert knowledge of how to handle the various requests is a responsibility of the operator office.

After conversion to CDO operation the CDO customers lose a majority of their contact with telephone company personnel on a *local* basis. It is essential that we keep in contact with these customers to determine their opinions on the service they are receiving.

TRAFFIC SURVEYS, made by the chief operator at the operator office, are an excellent method for obtaining this information. Such surveys will show the customer's reaction, whether critical or satisfactory, and also will indicate good or bad service trends. Unfavorable trends can usually be corrected *before* they result in serious complaints if arrangements are made for *prompt* handling of any service dissatisfaction disclosed by the survey.

The traffic service survey shows a personal interest in subscribers served and is a good means of measuring the customer's opinion of the service he is receiving.

Of course, many other factors affect the quality of service, such as equipment maintenance, billing service, etc., and the co-ordinated efforts of all departments are necessary for a successful program.

In the last analysis, however, it is the job of the operator office to cement and maintain good customer relations by rendering constantly good operator service.

Traffic Quiz

(1) Q. If a calling customer claims that an unqualified person answered the telephone on a station call and he received no satisfaction, how should the operator proceed?

A. Try to determine why no satisfaction was received, and if you find the claim to be just, cancel the timing entry and proceed as for a DA report.

(2) Q. When would the person answering be considered unqualified?

A. Someone who cannot or will not take a message or answer questions intelligently, such as a young child or a workman temporarily on the premises could be considered as unqualified.

(3) Q. What would be considered a

(Continued on page 53)

More People Acquainted With Independent Industry, Kentuckians Told

A REVIEW OF THE United States Independent Telephone Association's progress in making Americans aware that there is an Independent telephone industry was given by Leon F. Roberts, USITA's director of information, at the convention of the Kentucky Telephone Association held in Lexington on Mar. 6.

A. L. Daughters of Covington presided at the meeting which established a new record for attendance with 360 registrants.

Mr. Roberts, speaking on "It Pays to Publicize", first defined public relations and then proceeded to give examples demonstrating its effectiveness.

His definition of PR was short and sweet: "Being good and getting credit for it."

As for samples of PR's effectiveness, he mentioned among others the fact that Pikes Peak is well known even though there are 30 mountains in Colorado which are higher. Pikes Peak is the best known because it has been given the most publicity.

Reviewing the USITA's advertising-PR program, he went back 17 or 18 years to the establishment of the Telephone Advertising Institute (TAI). The Institute, as most Independents know, is sponsored and supervised by USITA's Advertising Committee. It supplies hundreds of telephone companies with mats for local newspaper advertising use, bill inserts, decals, radio spot announcements, publicity releases, etc.

After describing this initial step in the advertising-publicity field, he mentioned one of USITA's current projects—the 28-minute sound and color film, "The Independent."

Between the launching of TAI and the production of the movie, there have been many intermediate steps.

On May 10, 1954, the first of a series of full-page advertisements appeared in *Time, U.S. News & World Report* and *Farm Journal*.

These were designed, Mr. Roberts explained, to "acquaint the public with the fact that there was such a thing as an Independent telephone industry, that it was a dynamic, growing business. . . . Until that time, many of us frequently had known the embarrassment of hearing someone say, 'You work for an Independent telephone company? I didn't know there was such a thing. I thought all telephones were operated by the Bell System.' Although we had been in business for six decades, we had hidden our light under a bushel. . . "

Since these first advertisements, many, many pages of national and trade magazine advertising have been published in behalf of the USITA and its member companies.

"During the past several years," Mr. Roberts said, "there have passed over my desk thousands of letters from interested readers of our advertisements. . . . These letters have come from all over the United States and 16 foreign countries. Some of the inquiries were from men and women who wanted to invest their savings in Independent telephone company securities. Many came from persons whose imagination had been fired to the extent that they wanted to become a part of the Independent industry and sought employment in our ranks. Others came from school teachers and college professors who asked for copies of our informative pamphlet, *An American Story*."

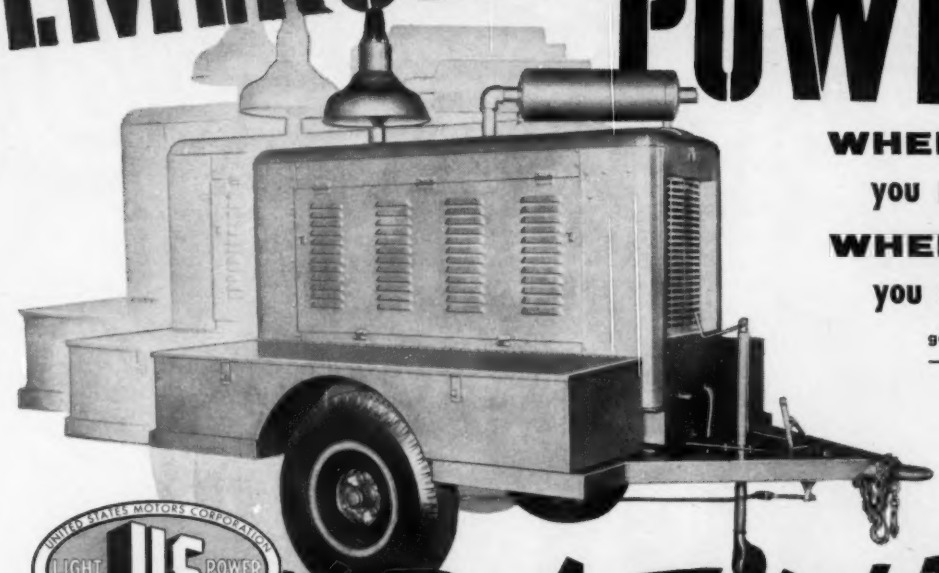
He continued: "With only a modest budget, we have acquainted the American people with the extent of this industry of ours in terms of telephones in service, plant investment, communities served, rate of growth and other significant facts. In other words, we too now are the telephone company to a lot of American cities and towns—and on a lot of American farms."

As the industry has gained this national identity and recognition, it has also gained, Mr. Roberts pointed out, public support against unjustified federal, state and municipal encroach-

(Continued on page 57)

Shown above are the 1962-63 officers of the Kentucky Telephone Association. They are, left to right, L. T. Utz, president; Gordon Saunders, vice president; W. W. Thomason, vice president; and Arthur F. Boyd, secretary-treasurer.

EMERGENCY POWER



WHEN
you need it
WHERE
you need it

gasoline or diesel
— 10 to 35 KW

UNITED STATES MOTORS CORPORATION
LIGHT US POWER
OSHKOSH • WISCONSIN

VERSA-TRAILERS

single or 3-phase power from each model!

United States Motors mobile standby power units provide complete power versatility for today's complex communication systems. By careful location of Versa-Trailers in a system, many exchanges in an area can be served by a single unit. Individual engine generators are unnecessary for each type of current, thereby greatly minimizing standby power cost.

STANDARD MODELS AND RATINGS

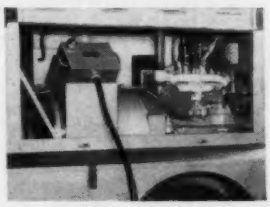
(gasoline) T3523G18	35 KW, 3 phase, .8 PF
(diesel) T3523D18	23 KW, 1 phase, .8 PF
(gasoline) T2515G18	25 KW, 3 phase, .8 PF
(diesel) T2515D18	15 KW, 1 phase, .8 PF
(gasoline) T1510G18	15 KW, 3 phase, .8 PF
(diesel) T1510D18	10 KW, 1 phase, .8 PF
	15 KW, 1 phase, 1.0 PF

STANDARD VOLTAGES

1 phase .... 120 or 240, 2 wire
120/240, 3 wire

3 phase . 240, 3 wire
120/208, 4 wire
60 cycle — 1800 RPM

FOOL PROOF SELECTION OF DESIRED VOLTAGE BY SELECTOR-PLUGS AND CABLES



authorized sales and service representatives in . . . Chicago, Ill. Detroit, Mich. Los Angeles, Calif. Dallas, Tex. Jacksonville, Fla. Portland, Ore. Denver, Colo. Jersey City, N. J. San Francisco, Calif.

UNITED STATES MOTORS CORPORATION
LIGHT US POWER
OSHKOSH • WISCONSIN

UNITED STATES MOTORS CORPORATION
110 West Fifth Avenue
Oshkosh, Wisconsin

News on New Products

UTILITY TRENCHING UNIT—A new utility trenching unit designed for the International Cub Lo-Boy, the company's small tractor, is now being manufactured by Auburn Machine Works, Inc. The new Auburn trencher is reported to cut trenches 4 inches to 12 inches wide and down to 5½ feet deep. It is said to be suitable for digging telephone and power cables, service connections and other small trenching jobs. With front-mounted backfill blade, the unit is a self-sufficient trenching and back-filling rig.

The Auburn utility trencher is offset-mounted to give the operator a clear view of the guide line and trench. The power is from the Cub Lo-Boy to the Auburn auxiliary transmission which reduces the ground speed of the tractor for any trenching. This, Auburn said, allows any of the tractor transmission speeds, including reverse, to be used for trenching.

Auburn power take-off (PTO) and angle drive transmits tractor power from auxiliary transmission to digging chain of the trencher. This provides a constant PTO speed of 600 rpm to drive the digging chain.

The trenching ladder has digging chain with heat-treated, alloy-steel cutting bits to eliminate filling with dirt or sticky material. The Auburn heavy-duty rock-deflector shield is permanently fixed to the boom. Shield protects both the operator and trencher drive assembly from dirt, rocks and impact. Request NP1860.

•

LAWN WIRE PLOW—A plow built specially for plowing in cable in lawns, golf courses, parks, etc., has been introduced by Michaels' Steel Fabricators & Welding Co.

The plow, with an adjustable plowing depth of 12 to 18 inches, can be winched, drawn by truck or small tractor. It weighs 65 pounds. Cable tube is ⅝ inches in diameter.

A ⅜-inch cable sling prevents the towing eye from flying if the safety shear pin breaks, Michaels reports.

The plow is said to cause only slight ground disturbance because of down pressure on the coulter knife under skid when being pulled, making a deep, clean cut for plow shear and cable tube to follow in. Request NP1861.

•

BATTERY POWERED "WIRE-WRAP" TOOL—Showing one of the first electronic applications of the nickel-cadmium battery to a production-type tool, Gardner-Denver Co. has introduced a completely portable, battery-operated variation of its standard line of "Wire-Wrap" portable tools.

"The new model 14R2 tool has the advantages of small size, light weight and complete portability," according to Brice D. Maddox, vice president and general manager, Grand Haven Division, who unveiled the new product. "It may be used in remote locations where air or electric power is unavailable or awkward to supply."

A permanent magnet electric motor drives the tool, powered by a 2.3 amp. hour rechargeable nickel-cadmium battery with a built-in charger.

"An estimated 4,000 connections

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1860_____;	NP1861_____;	NP1862_____;	NP1863_____;
NP1864_____;	NP1865_____;	NP1866_____;	NP1867_____;
NP1868_____;	NP1869_____;	NP1870_____;	NP1871_____;
NP1872_____;	NP1873_____;	NP1874_____;	NP1875_____.

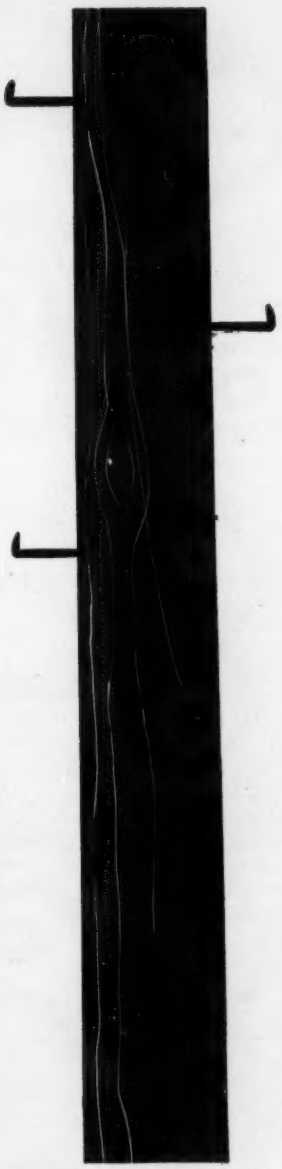
Name .....

Company .....

Street .....

Town and State .....

4/14/62



all you need is a cable, a clamp and a pole

Anaconda Figure-8 Telephone Cable eliminates separate messenger and spinning

You save time at every pole with Anaconda Figure-8 cable, because both messenger and cable are combined under one common Figure-8-shaped jacket that is easily installed into tight-gripping cable clamps. There is no field spinning, no separate messenger reel.

And when you dead end Figure-8 at a pole, there is no end curl or twisting because Anaconda's exclusive "dead" strand is pre-formed to stay put. In fact, "dead" strand eliminates twisting altogether even when you lay cable by the road.

Figure-8 cable is long-lasting. It resists abrasion, scraping, flexing — moisture, heat, and cold. An Anaconda-developed sealing compound prevents moisture migration and corrosion.

Anaconda makes Figure-8 Telephone Cable with standard color-coded Alpeth or Cupeth constructions, with longitudinal corrugated shields on all sizes for flexibility. Average mutual capacitance is 0.083 mf/mile.

Find out more about Anaconda Figure-8 Telephone Cable. Contact your local Anaconda representative or write to Anaconda Wire and Cable Company, 25 Broadway, New York 4, New York, Department EFL-1-T. 61331

PHONE THE MAN FROM
ANACONDA®
FOR FIGURE-8 TELEPHONE CABLE

THE INDEPENDENT MANUFACTURER FOR THE INDEPENDENT TELEPHONE INDUSTRY

with 24-gauge solid conductor wire are possible before recharge of the battery is necessary," Mr. Maddox said. The battery recharges on 110 volt, 60 cycle current in approximately 14 to 16 hours.

"We feel that telephone and computer installation and repair will be a prime market for the new battery-operated tool," he said. "Air and electric power tools of this kind are used in such installation work, as well as in central telephone office repair and transfer work."

The index mechanism of this tool is simplified so only four inexpensive plastic parts are used, Gardner-Denver says. Plastic is used extensively in this tool because of its light weight and low cost, and such components as the battery case, the housing of the tool, the cam, gears and trigger are made from plastic.

The tool may be equipped for wrapping all wire sizes between 22-gauge and 32-gauge. The low cost of parts replacement and the ease of replacing batteries should make this a highly practical tool, particularly for field repair work. Request NP1862.

•

AUTOMATIC LIGHT CONTROL FOR BOOTHS—A new automatic light control for on-at-dusk, off-at-dawn control of lights in outdoor telephone booths and drive-up telephone canopies, has been introduced by Lightguard Electronic Mfg. Co., Inc.

The new Lightguard, called the 300-T, has a capacity of 300 watts and is described as compact and permitting inconspicuous mounting within the booth itself to eliminate the possibility of pilferage and vandalism.

The 300 watt capacity permits control not only of the lights within the booth, but also of external lighting to protect booth users during the night.

The Lightguard 300-T is, said to be designed for ease of installation both by booth manufacturers and operating telephone companies.

As shown, the installation, the manufacturer states, merely involves plugging the lightguard into the existing receptacle within the telephone booth and then plugging the built-in booth fixture into the female portion of the "piggy-back" plug. Thus, the Lightguard control does not become a permanent part of the booth but an accessory, which can be installed or removed easily.

Other significant features of the control include a UL and CSA-approved design, as well as a hermetically sealed photocell. Reduction in electrical energy consumed and extension of lamp and transformer life are claimed to result in savings. Request NP1863.

•

HIGH-VOLTAGE TEST UNITS—The recently established Multi-Volt Division of Multi-Amp Electronic Corp. has developed two lines of high-voltage power supply units—one for ac testing and the other for dc testing. The company states these units are available for a wide variety of dielectric tests according to recommendations of ASTM D-149.

Telephone industry applications for the units, according to the company, are:

Plant Equipment—motors, controls, switches, panels, wire and cable, circuit breakers, generators, transformers and insulated tools.

Line Equipment—wire and cable, insulated tools, lineman's gloves and rubber blankets.

Research or maintenance equipment—solid barriers, terminal blocks and strips, insulating materials and sheet laminates.

Multi-Volt Models HA are designed for ac testing. They include six portable types with outputs ranging from 2.5 to 25 kv; 16 mobile, bench and console types with outputs from 5 kv through 25 kv; and six console types with outputs of 50 to 75 kv. Kva output ratings range from 0.4 to 7.5 kva.

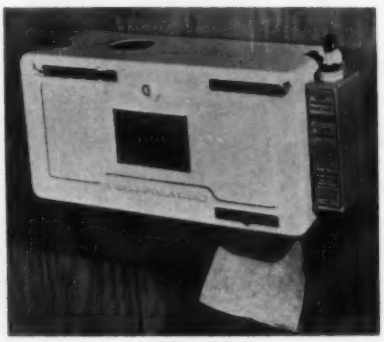
Multi-Volt Models HD are designed for dc testing. They include seven portable types with outputs ranging from 5 to 25 kv, and eight bench and console types with outputs from 25 through 100 kv. Illustration shows Model HD bench-type unit.

The foregoing Multi-Volt high-voltage units can be arranged for various standard input voltages, 50-60 cycle, single-phase, supplied by a neoprene-covered, three-wire, 10-foot line cord.

Each unit has a 5½-inch multi-range kilovoltmeter and a meter range switch which also switches the primary of the output transformer for better adjustability of the output. Meter accuracy is ±3 per cent of full scale. Request NP1864.

•

LENS-CLEANING STATION—Cleaning eyeglass lenses is made easier by a dispenser cabinet recently developed by The Wilkins Co., Inc., which provides a lens-cleaning station.



The cabinet contains a bottle of liquid lens cleaner with a spray pump that provides "one push" fingertip application of the lens-cleaning liquid. The cabinet also contains a pack of interfold lint-free tissues and dispenses one at a time. There is space at the top of the cabinet for disposing of used tissues.

The company says clean lenses improve vision, reduce eyestrain, and increase workers' efficiency.

A special anti-fogging attachment, also available for the cabinet, provides a spray of anti-fogging liquid which prevents steaming-over of eyeglasses, the Wilkins Company states. This feature is particularly desirable for work areas where there is a wide change in temperature with moisture condensation on the eyeglasses.

The cabinet can be furnished in baked-enamel finish in either safety green or white. It provides a method to "keep safety in sight." Request NP1865.

•

MIDGET SIZE SCREWDRIVER—A non-magnetic, non-sparking screwdriver in midget size for electrical and

He's burying a lot besides cable

Down it goes—the cable, and all the problems associated with aerial plant—ice, wind, fire, fire-arms, traffic accidents, tree trimming and complaints about unsightly poles, obstructing guys—buried. And it doesn't take a fortune or a fleet of equipment to realize the benefits of buried cable.

Compact and self-contained, the highly maneuverable John Deere "1010" Crawler with 230A Cable Plow lays multiple pairs of wire or insulated cable up to 1-3/16 inches in diameter, to any depth from 6 to 28 inches. Soil displacement is negligible—quickly compacted by the line truck or tractor.

Wire or cable is inserted in the cable guide without cutting, threading or splicing. Entire cable channel is opened by removal of a locking pin. Roller-equipped guides gently direct the cable through the plow.

Look in your own yellow pages for the name of the John Deere dealer serving your area. He'll be pleased to arrange a demonstration for you. If long-term leasing might better serve your needs, he has those facts, too.

John Deere, 3300 River Drive, Moline, Illinois.

JOHN DEERE

TRACTORS
BACKHOES
CABLE PLOWS
AND
CONSTRUCTION
EQUIPMENT

electronic assembly and service work has just been added to its line of professional hand tools, Xcelite Inc. reports.

The new tool features a ⅛-inch x 2-inch beryllium-copper round blade securely embedded in a black plastic (UL) handle which is fitted with a pocket clip, the manufacturer states. Over-all length of the new screwdriver is approximately 4¼ inches. Request NP1866.

•

EARTH BORER—Holan Corp. announces a new derrick-suspended earth borer which employs a full-floating planetary gear system.

The new digger, known as the 5300-S Earth Borer, weighs less than 300 pounds and delivers from 2540 to 2800 lbs./ft. auger torque using an S.A.E. power take off (PTO) and a 2000 psi hydraulic system. With a split-shaft PTO, auger torque is 4140 to 4600 lbs./ft.

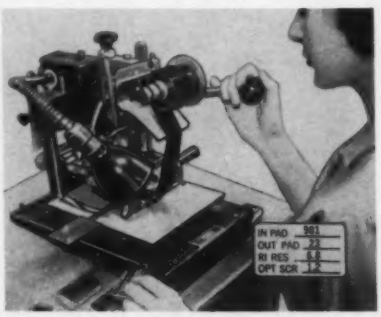
(Holan calculates auger torque by determining hydraulic horsepower delivered to the transmission gearing, allowing for inherent efficiency losses in pump, connecting lines and hydraulic motor.)

The full-floating planetary gear system evenly distributes gear loads and anti-friction bearings are used on fixed shafts. The main hydraulic valve operates all phases of the digger, providing metered speed control.

The company says the ductile iron housing is impact-resistant to take abuse in the field. The 5300-S handles all heavy-duty augers and can be used on any Holan derrick. Request NP1867.

•

NAMEPLATE IMPRINTER—A compact, manually-operated machine for fast, efficient imprinting and debossing of Brady self-bonding nameplates is a new product of W. H. Brady Co.



The company says the imprinter produces up to five lines of imprinted copy in one operation and allows imprinting or debossing serial numbers, operating instructions, or model numbers as you require them . . . at production-line speed. Color imprint or deboss is said to be clear, sharp, exactly positioned, and permanent.

The machine requires no inks or paints. It prints with dry Perma-Foils, in various colors, furnished in rolls, which are heat-fused to the nameplates. The unit is easy to operate, Brady states, and copy changes can be made in a few seconds. Request NP 1868.

•

NEW BOOTH BANK—M/T Mfg. & Supply Co. has announced several new features for public telephone booths, which are said to eliminate theft from paystations and reduce the loss of money to petty thieves.

The patented system consists of a paystation which does not retain any money. After the money is deposited, it signals the operator and sets up a circuit. In one system, it then passes through the paystation into a bank concealed inside the backboard of the

booth. The bank is dual locked. Removal of the access door to the bank area reveals only a small hole. It then is necessary to unlock a second device to bring the money box into view. Collections, however, are quick and simple.

In the other system, the money passes through the paystation into a bank situated in the pedestal which holds the booth (see cut).

The banks are built into all M/T extruded aluminum and steel booths and the company's "boothette."

The company offers a kit with which to convert existing booths and says the conversion can be made on the site.

The company also sells a paystation which can be used with any wall or desk set. A telephone is attached by inserting the leads under the proper junction block screws. The booth has a single coin slot and is said to have positive slug rejection features.

The paystation was originated to make the Remote Bank possible. Request NP1869.

•

FRONT TAP SHOES—Ryco Engineering, Inc., announces new 50-Type and 300-Type Front Tap Shoes (300 Type shown) designed for use on C52, C50, and 1177 Type protectors and 300 Type connectors.

Ryco states these front tap shoes can be used in cable-pair transfer work, testing and identification of cable pairs at the main distributing frame in complements of 50 pair at one time. Both shoes contain two 25-pair locking-type Amphenol connectors, which permit attachment to a cable pair identification test set, cable pair tester or the bridging of two cables by means of an intermediate connecting cable with mating Amphenol plugs.

Ryco engineers say both shoes have

Just a small amount of "Dybar," applied to this brush, knocked it out around these poles and under the lines.

No equipment is needed to apply "Dybar." You spread the pellets dry—just as they come from the container.

These little pellets of Du Pont "DYBAR"

fenuron weed and brush killer

do a big job of brush control

"Dybar" is easy to apply for effective and economical brush control. Spread these pellets dry—just as they come from the container. A single application controls a wide variety of woody species.

Many power companies have obtained exceptional savings—in both labor and chemical costs—by using "Dybar" for brush control. One utility, for instance, reports that "Dybar" saved $13 an acre in chemical costs—and 50% in time—when compared to use of a basal spray. To obtain similar results—use Du Pont "Dybar" in your brush control program.

Non-volatile, "Dybar" is safe to use near vapor sensitive crops. It is also non-flammable, non-corrosive to equipment and low in toxicity to man and animals.

For more information on "Dybar"—and all other Du Pont Weed and Brush Killers—write E. I. du Pont de Nemours & Co., (Inc.), Industrial and Biochemicals Department, Room 2543-N, Wilmington 98, Delaware.

To control brush by spraying—use Du Pont "AMMATE" X

No other foliage applied brush killer controls as many species as Du Pont "Ammate" X. It is highly effective and non-volatile. By spraying "Ammate" X, you can gain long-term brush control on rights-of-way, even when they adjoin croplands planted to vapor sensitive crops. "Ammate" X is also low in cost and low in toxicity to livestock and wildlife. Remember to use "Ammate" X for an effective and safe brush control spray program.

On all chemicals follow labeling instructions and warnings carefully.

DU PONT

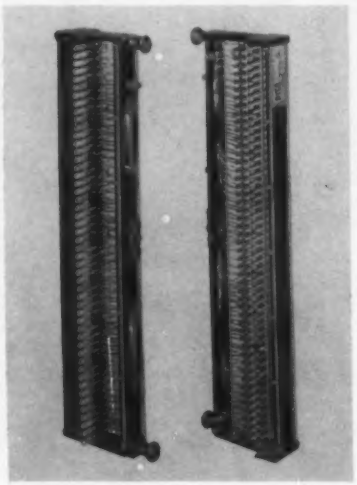
REG U S PAT OFF

Better Things for Better Living
. . . through Chemistry

DYBAR® · **AMMATE® X**

fenuron weed and brush killer — weed and brush killer

excellent features to insure positive contact with the protruding lugs of respective protectors or connectors and additionally, provide the means of individually opening the "ring" or "tip" side of a pair without disturbing the contact of any other pair. The shoes weigh 4½ pounds and can be readily



attached or removed within a few seconds. By utilizing a full-length hinged construction and two quick-acting clamp knobs, the 50 Type front tap shoe is rigidly secured to the protector. Additionally, the 300 Type front tap shoe can also be readily locked to the connector with two locating buttons and two sliding brackets located at the top and bottom of the shoe. Request NP1870.

•

CABLE PAIR IDENTIFICATION TEST SET—Ryco Engineering, Inc., also is manufacturing a low-cost set for identifying exchange cable pairs in complements of 50 pairs as a one-man operation. The test set is comprised of

a central office unit and field unit and is used with the 50 or 300 Type front tap shoes. Connection between the shoes and the office unit is made by an intermediate connecting cable in the central office.

Ryco states that identification can be made by an audible or high-frequency tone source, as may be preferred. Appropriate terminal posts are provided in the set for attachment to either tone supply source. A working control pair is established between the central office and field location, either within or separately from the 50-pair complement. The "ring" side of the control pair is used for transmission of tone and the "tip" side for actuating a stepping arrangement in the central office unit by a push-button switch located in the field unit.

Oher features, according to Ryco, are a toggle-type switch for monitoring a busy circuit or applying the tone source. Also, two signal lights in the office unit indicate the first and last position of the 50-pair stepping arrangement to maintain sequence control with a visual numerical counter in the field unit.

Ryco Engineers say the set is light weight for portable use. Each unit contains its own standard telephone type battery source which can be readily removed for replacement. Request NP 1871.

•

CABLE PAIR TESTER—Supplementing its line of equipment for testing cable pairs, Ryco Engineering, Inc., announces a Cable Pair Tester which, the company reports, will test for shorts, grounds, opens and crosses of spare cable pairs prior to transferring cable.

According to Ryco, the tester is connected to a 50 or 300 Type front tap shoe by an intermediate connecting cable. This permits the rapid testing of 50 spare cable pairs by the simple rotation of three tandem selector switches numbered from 1 through 50. Test selections of "shorts", ring ground, and tip ground are made with a selector switch which reflects readings to a 0-1 milliamp meter. A suitable potentiometer is incorporated in the circuit to obtain full-scale deflection when the input is short circuited.

Ryco Engineers report this unit is constructed for trouble-free operation under normal usage and is currently being used in the telephone industry.

The unit has a hinged protective cover which can be removed instantly. An optional patch cord is also furnished for testing individual pairs, if so desired. Request NP1872.

•

PORTABLE FLUORESCENT LIGHT—Day-Ray Products, Inc., has announced a new portable fluorescent light that is designed for making inspections, adjusting equipment and use in temporary work areas. This light should be useful for cable splicing in manholes.

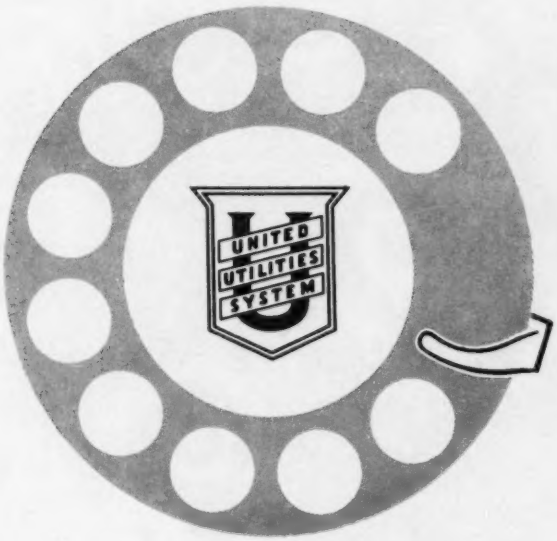
The lamp is vapor-and moisture-tight and when equipped with a rubber-jacketed ballast case, it is suitable for hazardous locations. When so equipped, the unit meets the immersion and explosion-proof requirements of Mil Spec. Mil-E-5272A. A reflector shield can be provided which is a foil-lined outer tube. This reflector eye-shield is permanently secured by an acrylic adhesive to the inside and covers half of the circumference of the plastic tube. The light output is said to be increased about 30 per cent by the use of the reflector.

An 18-inch handle is optional on the 6, 8, 13 and 15-watt models. The largest lamp furnished is 30 watts (1900 lumens). Request NP1873.

•

NEW SOLDERING TOOL—A new soldering tool with "plier-action" grips, the Mark V, has been announced by Triton Mfg. Co. It is designed so the pieces to be soldered can be gripped, heat can be applied, and the pieces held until the solder sets.

The handle controls these three soldering operations for the tool, which claimed to provide a faster, easier



America's second-largest, wholly-owned, independent telephone system has just made its 68th consecutive dividend disbursement, having recently increased per share payments for the fifth time in the past four years. Annual Reports sent on request.

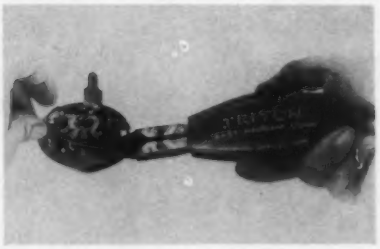
UNITED UTILITIES, INCORPORATED

CORPORATE OFFICES:
304 No. Cedar St.
Abilene, Kansas

OPERATING OFFICES:
406 West 34th St.
Kansas City, Missouri

way to solder than with conventional soldering guns or irons.

It is powered by a heavy-duty 250-watt dual heat transformer that permits either high or low controlled heat temperatures. The tool is furnished with both removable tapered carbon tips and interchangeable metal tips.



Other features claimed for this tool are that it consumes power only when soldering, is light weight, easy to handle, and safer to use as the tips heat and cool instantly which minimizes the danger of burns or injury. The tool is also claimed to be well suited for use in silver soldering small parts.

Designed primarily for industrial use, it also is suited for soldering in shops, general service, and repair work. It also is claimed to be suited for the "do it yourselfer" or kit builder. Request NP1874.

•

SECURITY SYSTEM—Western Industries, Inc., has announced its new Guard-Kard security area control system. This system provides a unified entry control with personnel identification, plus a printed record. The system should prove desirable for telephone companies wanting to control the entrance of night operators and workers in equipment areas.

This device provides an automated admittance system operated by an electromechanical principle through the use of a plasticized embossed card. The special locks are said to be actuated ony when the properly embossed Guard-Kards are inserted into the remote-controlled lock unit, and only those holding cards with currently active codes can enter. The two basic parts to the system are: The Guard-Kard lock and the Guard-Kard card.

The lock is built with a precise matrix which accepts only the specific coded nomenclature on the factory-embossed card. Validity is assured by a unique system which rejects a card which has been changed or altered.

The plasticizied admittance card is bill-fold size. It contains no metallic substance, and operates entirely on the embossed code which actuates the lock. The company says the card's entry element can have up to several codes, thereby giving the holder access to a number of different areas; others would have a lesser number for limited access. The card code cannot be duplicated elsewhere. Special embossing equipment was built to rigid specifications with special characters and spacing to assure unique coding.

The cards can be individualized. In addition to having an embossed code for entrance actuation, they may also show employe's card number and name.

The equipment records the card numbers from each lock-station in the system. This information is recorded on time-dated visual or machine readable tape. Request NP1875.

Authorize Nine REA Loans For Systems in Five States

NINE TELEPHONE loans totaling $2,856,000 have been approved by the Rural Electrification Administration in five states as follows:

La Valle (Wis.) Telephone Cooperative; $198,000; March 15.

This loan will assist La Valle to improve service for 172 subscribers and furnish initial service to 69 subscribers. The borrower also proposes to acquire the Cazenovia Telephone Co., which now furnishes magneto service.

In addition, the borrower plans to build new dial central office to replace the magneto facilities at Cazenovia; and a portion of the loan will be used to complete the system authorized under a prior REA loan.

Loans to this cooperative will help enable it to bring new and improved service to 679 subscribers.

•

Winnebago Cooperative Telephone Association, Thompson, Ia.; $152,000; Mar. 19.

With the help of these funds the company will be enabled to improve service for 293 subscribers and furnish new service to 37 subscribers. The company has recently acquired the Kensett Cooperative Telephone Co. now providing magneto service. A new dial central office is planned to replace the magneto switchboard at Kensett.

REA loans to this association will help make possible new and improved service to 4,372 subscribers in Iowa and two in Minnesota. Ten of the proposed 11 exchanges of the system now furnish dial service to approximately 3,780 subscribers.

Central State Telephone Co., 3228 University Avenue, Madison, Wis.; $166,000; Mar. 19.

The company plans to use this loan to furnish initial service for 317 subscribers in its service area. Facilities required include expanded central office equipment. A portion of the loan funds will be used to complete the authorized system.

REA loans to Central State will help make possible new and improved service to 3,168 subscribers. The five exchanges of the system are tentatively scheduled for cut-over in June of this year.

•

Win-Tel Telephone Co., Windom, Tex.; $421,000; Mar. 21.

Win-Tel plans to use these funds to improve service for 383 subscribers and furnish initial service to 221 subscribers. The company has recently acquired the Lamar-Delta Telephone Co., which consists of magneto exchanges at Ben Franklin, Pecan Gap and Roxton.

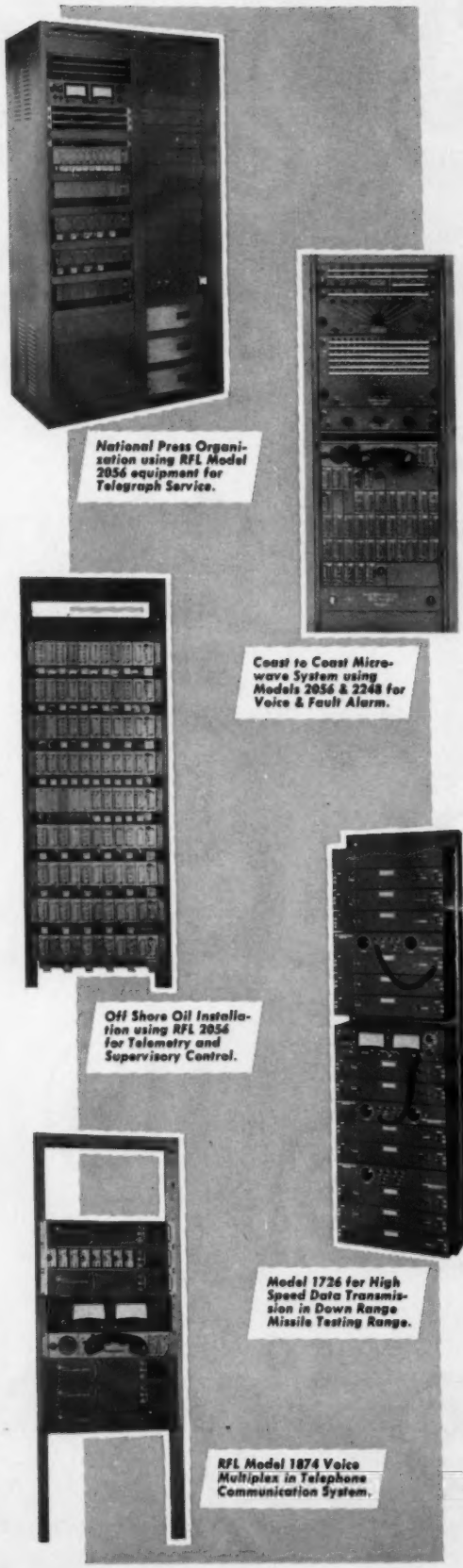
New dial offices are planned to replace the three magneto switchboards, and a portion of the loan will be used to complete the authorized system.

Loans to the Win-Tel company will help make possible new and improved service to 1,144 subscribers. Two of the proposed five exchanges now furnish dial service to approximately 320 subscribers.

•

The Ritchie Telephone Co., Harrisville, W. Va.; $306,000; Mar. 21.

(Continued on page 54)



National Press Organization using RFL Model 2056 equipment for Telegraph Service.

Coast to Coast Microwave System using Models 2056 & 2248 for Voice & Fault Alarm.

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Model 1726 for High Speed Data Transmission in Down Range Missile Testing Range.

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ALABAMA, TENN., NO. CAR., SO. CAR., GEORGIA
Dickerson Eng., Atlantic Beach, Fla.

CALIFORNIA
Luscombe Engr., Pasadena, Calif.

ORE., WASH., IDAHO
Tarbell Electronic Communication Sales
Portland, Oregon

MD., WASH., D.C., VA., DEL.
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CANADA
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OVERSEAS
Telesco International, New York

RFL EST. 1922 *Radio Frequency* LABORATORIES, INC. Boonton, New Jersey, U.S.A.

AE
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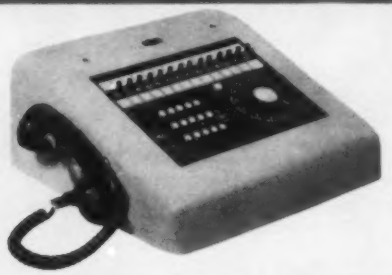

TYPE 80A PABX. A complete communications system for up to 80 lines. Handles up to 12 inside and 16 outside calls at once. Compact attendant cabinet keeps traffic moving swiftly.

TYPE 86 PHONE. Provides switchboard convenience for small subscribers. Up to six central office, PBX or private lines. Dial or pushbutton intercom service. Choice of colors.

TYPE 85-C PHONE. For two-line pickup, signaling and extension exclusion. Ideal for retail store or small office. Simple turn button switches from one line to another. Choice of colors.

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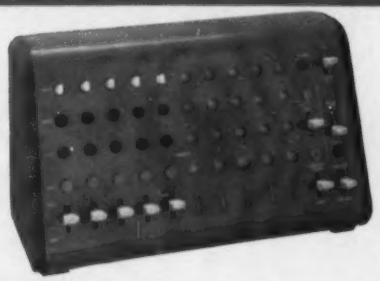
For details on our complete line of business phones, PABX and PBX boards and key systems, see your AE representative. He can also furnish you with valuable sales aids to help you promote business communications equipment. To contact him, just write Automatic Electric Sales Corporation, Northlake, Illinois.

FOR LARGE OR SMALL SUBSCRIBERS!



TYPE 75 PABX. Designed to serve up to 200 lines. Can be expanded for greater capacity. Desk-type attendant cabinet (shown here) or floor-type attendant cabinet. 14 optional services.

CALL COMMANDER* PHONE. Key system service for up to 17 outside PBX or private lines. Push-buttons light to serve as line signals. Intercom and conference features, too. Beige or green.

TYPE 87 PHONE. Three lines with hold feature on each line. Signal button for secretarial buzzing. Optional: extension exclusion, common audible signal for all three lines. Choice of colors.

TYPE 40A PABX. A complete communications system for up to 40 lines. Handles up to six inside and 10 outside calls at once. Compact attendant cabinet keeps traffic moving swiftly.

AUTOMATIC ELECTRIC

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GENERAL SYSTEM

* CALL COMMANDER is a registered trademark of Automatic Electric Company.

Courts and Commissions

Okay Farm, Home Interphones, Miscellaneous Neb. Charges

The Nebraska Railway Commission on Mar. 28 approved rates and charges for The Lincoln Telephone & Telegraph Co. for farm and home interphone systems, as follows:

Farm Interphone System:

(a) This system is designed for farm use but is not necessarily limited to use thereon. It includes one outdoor loudspeaker/microphone, provides both exchange and intercommunication service, and indoor loudspeaker/microphones at each telephone.

(b) The following rates and charges are *in addition* to monthly recurring and nonrecurring charges applicable for associated main and extension stations.

	Monthly Rate	Installation Charge
Farm Interphone system: Includes two telephones and one outdoor loudspeaker/microphone. The telephones are equipped with the following features: Push-to-talk handsets, indoor loudspeaker/microphone and hold feature	$11.50	$25.00
Additional extension telephone (equipped with push-to-talk handset, hold feature, and indoor loudspeaker/microphone)	1.50	*
Additional outdoor loudspeaker/microphone	2.00	5.00
Additional indoor-type loudspeaker/microphone	1.25	5.00**
Mileage charges for extension telephones or loudspeaker/microphones:		
(a) First 1/10-mile radius main station	None	—
(b) Each additional 1/10-mile radius from main station: Telephones	2.00	
Speaker/microphones	.50	

Home Interphone system:

(a) This system provides exchange and intercommunication service at each telephone, and also provides intercommunication from each telephone in the system and a door answering unit. Any one system is limited to a maximum of five telephones and two door answering unit.

(b) The following rates and charges are *in addition* to monthly recurring and nonrecurring charges applicable for associated main and extension stations.

	Monthly Rate	Installation Charge
Home Interphone package: Includes one door answering unit and three telephones with hold, interphone, loudspeaker and microphone features	$7.00	$25.00
Additional door answering unit	1.00[1]	5.00[2]
Additional extension telephone (equipped with hold feature, microphone and loudspeaker)	.75	[3]

Note: 1 No additional charge applicable.
2 Not applicable if installed with initial package.
3 Not applicable if installed with initial package; otherwise regular schedule of charges applies.

The company was also given permission to revise its tariff with respect to service charges for changing instruments from a regular black or colored handset to a Starlite or Ericofon. In such cases, the regular service charge is waived (if the set being installed carries a higher monthly rental than the set removed), provided that the $5.00 charge for installing a Starlite or Ericofon applies. The regular service charge applies for changes from one color of a Starlite or Ericofon to another color.

•

Also, on Mar. 28 the Lincoln company and the General Telephone Co. of Nebraska, Columbus, were given permission to establish rates and regulations to concur with those of the Northwestern Bell Telephone Co., applicable to teletypewriter private-line service. Both companies have purchased, and will henceforth service, teletypewriter equipment in their respective territories. This equipment formerly was owned and serviced by Northwestern Bell (TELEPHONY, Mar. 10).

•

At its request, the Wellfleet Mutual Telephone Co. application was dismissed in which it had sought authority to establish rates for telephone service at the government radar station at Wellfleet.

Note: * No SCC when installed with initial package installation; otherwise regular schedule of extension SCC applies.
**Not applicable when installed with initial package.

California Commission Okays Sale of Telephone Stock

The California Public Utilities Commission has approved an application of California Interstate Telephone Co. to sell 160,000 new common shares, it was reported on Mar. 30. Willard Wade, president, said the company will use the anticipated 4-million-dollar proceeds from the sale to reduce short-term bank loans and to finance new construction.

The offering will be made through an underwriting group headed by William R. Staats & Co.

A registration statement has been filed with the Securities & Exchange Commission, Mr. Wade said. The price of the shares hasn't been determined, but it probably will be about $30 a share, depending upon the market price at the time of the offering, he said.

The company's short-term bank loans total $2,850,000 and will be increased to $3,600,000 by June 1, he said.

About 640,000 shares are outstanding, Mr. Wade said.

OK Raise in Ill.; Companies Seek Loan, Rate Approvals

The Illinois Commerce Commission on Mar. 27 approved the rate increase proposed by Mason City Telephone & Telegraph Co. (TELEPHONY, Dec. 2).

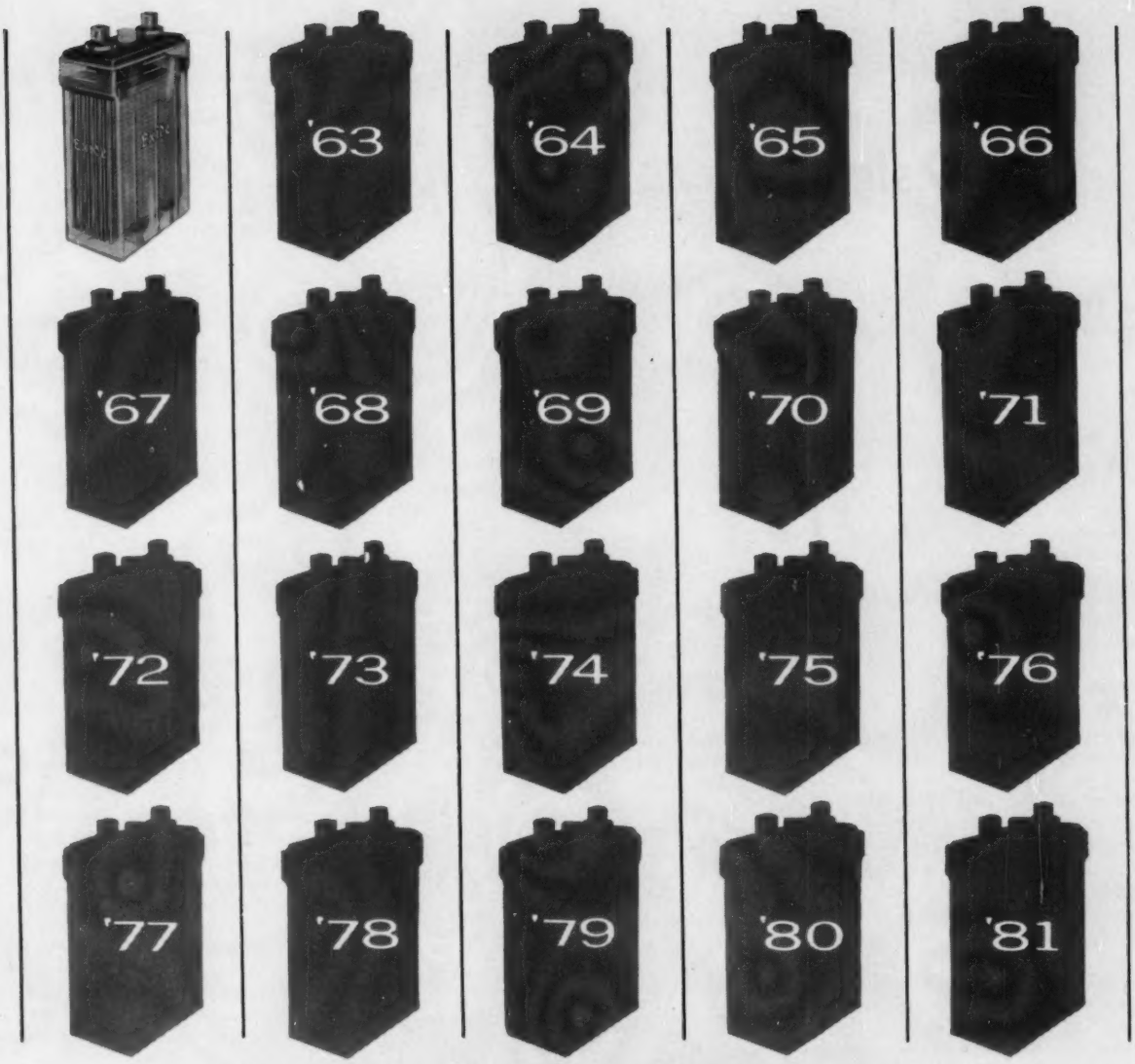
Also in Illinois, on Mar. 26 the commission received two financing applications.

Marion Telephone Corp., Sandoval, asked to issue $50,000 in notes secured by a mortgage and Fieldon Telephone Co., requested permission to do the same.

On Apr. 2 the commission was to have heard the application of County Telephone Co., Ingraham, for a rate raise.

Ask Certificate in Missouri

The Madison Telephone Co. asked the Missouri Public Service Commission on Mar. 27 for a certificate to render service in Holliday Community, whose 137 stations are presently served by a mutual telephone company.



New low-priced telephone battery has 20-year life potential already proven!

The long life of the Exide-Ironclad Battery was proven first in heavy duty cycling applications starting back in 1910. Then, about 20 years ago, Exide decided to try it in floating service. A battery of Exide-Ironclad design was put into an actual installation. Only recently was it taken out. Several cells were returned to the Exide laboratory for test. They were found to have 100-105% capacity and still had several years of useful life left.

As a result, Exide has introduced a new stationary Exide-Ironclad Battery. It incorporates all the basic improvements made during the past 20 years, plus several others of special benefit in stationary applications. It offers a life potential of 20 years or more. Yet its unmatched efficiency in use of materials makes possible a price down with that of the pasted plate batteries.

Write for a detailed sales bulletin, plus information on Exide's complete line of stationary batteries. Exide Industrial Marketing Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

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Get your complete battery power package from this one dependable source: the Exide battery you need, the Exide rectifier to match, and the service of Exide factory-trained technicians to keep both in top condition.

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The Electric Storage Battery Company
ESB

AE Designs "Clean Room" for Its Microminiature Relay

A "CLEAN ROOM" built and recently opened by Automatic Electric Co., Northlake, Ill., is said to have the most advanced contamination control techniques of any "Clean Room" designed specifically for producing relays. Automatic Electric's MM-22 Microminiature Relay, the first of a family of hi-reliability relays, is produced in this room, which meets the U. S. Air Force's most rigid requirements.

The objective of the MM-22 relay project has been to fabricate 2-pole, double-throw, 3 amp. "crystal can" relays, so reliable that every relay delivered will function when called upon, Automatic Electric states. It must function, the first time and every time, even after years of waiting on the shelf, says AE. This is the kind of reliability that is essential in missiles, spacecraft, and their supporting systems.

Since no one can assign a value to "how much" contamination can be tolerated to produce a desired level of reliability, the MM-22 was designed with the intent that every known source of contamination must be eliminated, or isolated.

To eliminate contamination from outgassing, while soldering the can to the header and closing the sealing hole, a new sealing process had to be devised. In this sealing chamber, the relay is swiftly evacuated, backfilled, and welded shut in a pure nitrogen atmosphere.

Proven "Clean-Room" procedures were used in building the "Clean Room" for the MM-22, including the following:

(1) The walls are porcelain enamel on steel.

(2) All other surfaces are flat and smooth.

(3) Temperature and dew point are closely controlled.

(4) The room is under positive pressure so that when a door is opened, air carries dust out of the room.

(5) Intake air is mechanically and electrostatically filtered to 1 micron (.00004 inches).

(6) Operators don dust-free Dacron uniforms in a small adjacent "clean room".

(7) Dust-generating cosmetics are shunned.

(8) Equipment can be maintained from outside the room.

Plating. A separate special room has been built for cleaning and plating the parts of the MM-22 relay. It is a "controlled environment" room built to "Clean Room" standards, with the atmosphere filtered down to 5 microns. Manufactured parts are degreased, chemically cleaned, washed with detergent, rinsed, and finally plated.

AE states that the possibility of electrolytic action between parts is eliminated and uniformity in cleaning and plating is achieved. Almost all parts, including the can, are gold plated to maintain this uniformity.

In a "super clean room" within a "clean room", these operators handle the parts of Automatic Electric's MM-22 microminiature relay through glove ports at (L. to R.): the sealing and welding chamber, vacuum bake ovens, and the cleaning line.

Because of the close tolerances, even the thickness of the plating must be closely controlled. Cross-sectioning and micrograph examination are constant inspection checks that insure uniformity of plating thickness.

Constant checks on ductility, stress and grain structure are also part of the normal inspection routine. Because some of the parts are ultra-critical, they are transferred from the plating barrel into a basket under water to cushion their fall.

The plated parts are moved to the "Clean Room" in specially sealed containers, and enter the room through an airlock. The air entering the room is filtered to the point where no dust particle 1 micron or over in diameter may enter.

Invisible Walls. Through a unique ducting arrangement, the microminiature relay "Clean Room" has invisible walls that divide the room into four parts. If an operator sneezes at one bank of benches, the moisture and contaminants are not circulated to other benches, but drawn out of the room almost immediately, says AE. The air-entry vents are overhead, and the air-removal ducts close to floor level, under the benches.

"Clean Room" within a "Clean Room". Unfortunately, people generate enough dust and contaminants to seriously reduce the cleanliness of any controlled environment. But highly trained people must perform the assembly operations. To avoid the contamination generated by the operators, a "Clean Room" within a "Clean Room" was devised by Automatic Electric's engineers. Cleaning and sealing operations are done in a series of integrated sterile chambers that, according to AE, are the ultimate in contamination control.

The rigidly controlled environment is completely isolated from the "Clean Room" proper. Parts are touched only through glove ports (see illustration). At no time, are the parts removed from the line during cleaning or sealing.

Parts entering the conveyorized and automatic cleaning line are first dipped in an ultrasonic cleaning bath. From there, they go into solvent and detergent baths. They travel through two stages of preliminary rinse and then on to a five-stage cascade rinse. In these five stages, the parts are rinsed with high-purity de-ionized water. This water is purified to 15 megohms, or about 36 times more pure than distilled water.

All through the cleaning stages, the air entering the chamber is filtered down to 0.3 microns. No particle 12-millionths of an inch in diameter, or larger, enters the cleaning chamber.

(Continued on page 42)

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WESTERN ELECTRIC IN NEW ORLEANS

New Orleans, the exciting city of Mardi Gras, jazz and historic French tradition, is one of thirty-three locations across the country from which Western Electric carries on its job of supplying the needs of the Bell Telephone companies.

Telephones, wire, cable, tools, office supplies—many of the thousands of products Western Electric makes or supplies to the Bell System—are sent out daily from strategically located distribution centers like the one in New Orleans. In addition, the centers perform the vital function of repairing and reconditioning large quantities of telephone sets, telephone apparatus, switching equipment, and teletypewriters.

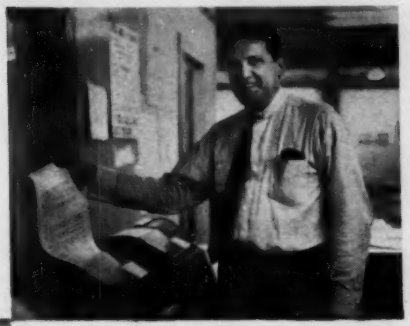
Helping meet the needs of Bell Telephone companies across the country is a major undertaking. It requires the efforts of thousands of Western Electric people in our own manufacturing plants and 33 distribution centers in addition to the thousands of men and women who work for about 40,000 W.E. suppliers located in every state in the Union. Some 90 per cent of these suppliers are small businesses with fewer than 500 employees.

One of the facts of American business life is the interdependence of large and small companies. It gets the big jobs done...and spreads prosperity across the nation.

JUST LIKE NEW is the way reconditioned telephones look and perform when they leave the Distribution Center—thanks to the skillful work of trained repair specialists who use the most modern tools and equipment in their work. In 1961, over 200,000 telephones were processed and returned to the Bell System service by the New Orleans center.

PERFECT PERFORMANCE of PBX switchboards reconditioned at the New Orleans Distribution Center is assured prior to shipping. The equipment is subject to rigorous tests that duplicate conditions of actual use.

COMMENTING on Western Electric's history in New Orleans, TIMES PICAYUNE editor, George Healy, says, "As the telephone service has grown to meet the needs of an expanding New Orleans, the Distribution Center has similarly grown."



WELL-STOCKED "TELEPHONE STORE" To supply the needs of Southern Bell Telephone Company, over 7,000 different items are kept in stock at the New Orleans Distribution Center. Modern equipment like this fork lift truck is used to achieve fast delivery . . . most orders are shipped the same day they are received.

AERIAL TENTS is the subject being discussed by (left to right) Brooke Duncan, executive vice-president of the Foster Company, Inc., Frank Dunn of Western's Supplies Inspection, and Richard R. Foster, owner of Foster Co. This New Orleans manufacturer of canvas products supplies the Bell System throughout the nation and is one of about 40,000 suppliers with whom Western Electric regularly deals. Last year alone, W. E. spent over 1 billion dollars on raw materials, products and services.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

In the last stage of the cascade rinse, the parts remain in the rinse tank until the conductivity of the water leaving is the same as that entering. This assures that all contaminants are removed.

The parts enter an airlock chamber where they are dried by a rapid-stream hot-air blast that evaporates all surface moisture. This air is filtered to 0.3 microns.

Final Cleaning. When the relays are completely assembled, they enter final cleaning and are subjected to the 10-stage cleaning cycle once again. Following the second hot-air blast, the airlock is evacuated, and flooded with pure, dry nitrogen filtered to 0.3 microns.

This allows transfer to the nitrogen atmosphere of the bake station. Here the cans and relays are baked in vacuum ovens for two hours, baking out any latent moisture. Moisture content is constantly monitored through the baking, cooling, welding and sealing stages.

From the baking station, the parts move into a vacuum interchange where they are allowed to cool.

Chamber within a Chamber. The relay assembly and the can now go into a 99.97 per cent pure nitrogen-filled "dry box" in which special-design welding heads are enclosed. The operator, through the glove ports, inserts the relay and can in a cavity in the lower section, then presses a set of buttons. The top head automatically lowers and seals off the "chamber within a chamber" surrounding the relay. The chamber sealing off the two relay units (not yet completely closed) is evacuated. At the correct vacuum level, the relay is backfilled with pure, dry nitrogen filtered to 0.3 microns, with a 10 per cent helium leak tracer.

At the proper moment, the top electrode lowers, seating the relay in the can, and the units are resistance-welded, in a total period of only 10 seconds. The welding head section now opens and the completed MM-22 is ejected from the contaminant-free cavity.

Leak Testing. Along with functional tests, Automatic Electric states that the completed microminiature relay is tested for leaks on a "bell jar" helium-sensitive mass-spectrometer. The leak rate must be not more than 2×10^{-9} cc/sec. At this rate, under a one-atmosphere differential, it would take a thimbleful of air 500 years to leak out!

Columbia to Hold Eleventh Utility Management Workshop

Thirty-six senior executives from America's public service industries will meet at Arden House, Harriman, N. Y. from July 22 to Aug. 3 for Columbia University's 11th annual Utility Management Workshop.

Professor Robert T. Livingston, of the Industrial and Management Engineering Department, in making this announcement said that this year for the first time the workshop will accept nominees from the "energy industries" as well as from the traditional utilities, telephone, gas, light, and water companies. As in the past, the workship will be restricted to privately-owned corporations.

The workshop is comprised of four projects—The World of the Manager which includes the setting of management, the corporate form and moral contracts; The Manager's Interactions, human vs. humane when the participants' problems are submitted to a panel of outstanding behavioral scientists for discussion; The Managing Process, including preparation for decisions and the decision process, functionalization and implementation; and The Energy Industries and Government.

The workshop, as in the past, has drawn on experts from the three fields of education, government and industry. Among this years speakers are: Felix Wormser, former assistant secretary of the interior; Dr. Robert Calkins, president of the Brookings Institution; Earle Machold, president of the Niagara Mohawk Power Corp.; Robert E. Ginna, chairman of the board of the Rochester Gas & Electric Corp.; Dr. John R. Dunning, dean of Columbia's School of Engineering & Applied Science; Marvin Chandler, president of Northern Illinois Gas Co., William Elmer, president of the Texas Gas Transmission Co.

Report General, Sunland Reach Merger Agreement

General Telephone & Electronics Corp. on Apr. 2 was reported to have reached agreement with directors of Sunland-Tujunga Telephone Co. of Sunland, Cal., on terms for the proposed acquisition of the Sunland-Tujunga Co.

Terms call for the exchange of nine-tenths share of General Telephone & Electronics for each share of Sunland-Tujunga common, according to Harlan W. Holmwood, executive vice president of General Telephone Co. of California, a subsidiary of General Telephone & Electronics.

Sunland-Tujunga has outstanding 375,991 shares of common and 12,008 shares of $25 par preferred callable at $26.25 a share. Mr. Holmwood said, "There will be no offer extended to the preferred shareholders of Sunland-Tujunga." There was no information as to how the preferred stockholders would be compensated.

Approval of Sunland-Tujunga's 600 shareholders will be sought after General Telephone & Electronics secures approval from regulatory agencies.

Laundry Institute Offers Garment Safety Leaflet

The Institute of Industrial Launderers and the National Safety Council have reissued their leaflet on garment safety, called "Unsafe Work Garments Can Cause Costly Accidents."

Garment safety is an obvious, but frequently overlooked area of safety, the leaflet points out. Ripped or torn clothing, trousers with cuffs, oil or chemical-soaked clothing that is not changed frequently enough—all can lead to serious accidents.

Copies are available free from the Institute of Industrial Launderers, 1833 Jefferson Place, N. W., Washington, D. C.

Day Succeeds Murphy As Head of Tidewater Company

At the board of directors meeting of Tidewater Telephone Co., Warsaw, Va. which was held on Mar. 30 following the annual stockholders meeting, W. Tayloe Murphy requested that the board not re-elect him as president of the company. Directors were told that following two major operations, Mr. Murphy received recommendations

J. S. DAY

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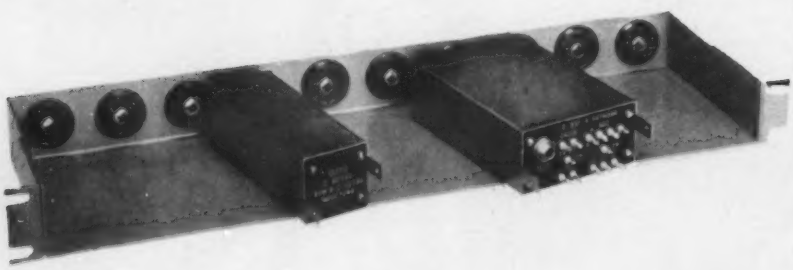
CEECO

Impedance Compensators for T.W.X. Mechanization

C-1613A FOR NON LOADED CABLE

C-837A FOR LOADED CABLE



PLUG-IN FEATURE ALLOWS PRE-WIRING AND EXPANSION

10—C-601AI CASES (20—C-1613A UNITS)

OR 5—C-837A NETWORKS PLUG INTO A

1-¾" x 19" SHELF

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from his doctors that he resign this position.

James S. Day was named by the board to succeed Murphy as president. Day, a veteran of 30 years in the telephone industry, joined the company as chief engineer in 1955. He was elected vice president in charge of operations in 1957, and a director of the company in 1958.

Other officers of the company re-elected are: Thomas H. Blanton, vice president; J. Albert Fergusson, secretary and treasurer; and H. Marston Smith, general counsel.

Mr. Murphy will continue to serve as a member of the board of directors. Other board members re-elected were: Thomas H. Blanton, W. Collins Chilton, John Warren Cooke, Mr. Day, James E. Galleher, James B. Martin, H. Marston Smith and George Walker.

Mr. Murphy reported earnings for 1961 of $1.87 per outstanding common stock share, up two cents from the $1.85 earned in 1960. The company gained 1346 stations during the year 1961 and has adopted a construction budget of $1,099,550 for the year 1962.

NATION'S CAPITAL

Concluded from page 12

brother, Ted, recently on television, said that after seeing the cares of office on you, he wasn't sure he would ever be interested in being the President.

"I wonder if you could tell us whether if you had it to do over again, you would work for the Presidency and whether you can recommend the job to others."

The President, his quick wit bursting to the surface, brushed the question aside with the following reply:

"Well, the first answer is 'yes,' and the second is 'no'. I wouldn't recommend it, at least for a while." He had barely mumbled the reply when he was pointing to another questioner, apparently impatient to get on with it.

Sullivan to Head General Of Cal., Lattin is Chairman

R. Parker Sullivan, vice president—marketing and sales of General Telephone & Electronics Corp., became president and chief executive officer of General Telephone Co. of California, effective Apr. 1. The announcement was made by Donald C. Power, GT&E chairman and chief executive officer.

In his new position, Mr. Sullivan will succeed Leroy E. Lattin, who has been named chairman of the board of General of California, succeeding the late Edwin M. Blakeslee.

General of California is the largest

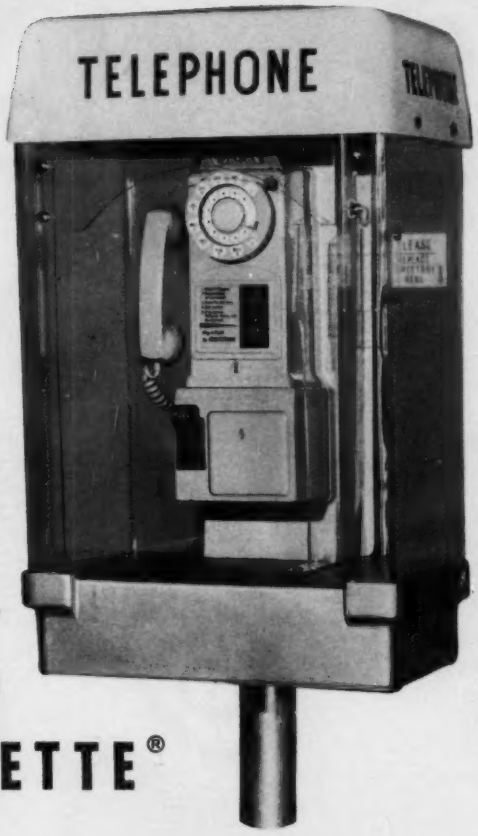
R. P. SULLIVAN

operating company in the General System, and the largest Independent telephone company in the country. With headquarters at Santa Monica, the California company serves nearly 1.3 million telephones in 32 divisions which include 162 communities in southern California.

L. E. LATTIN

Mr. Sullivan joined a predecessor company of General Telephone Co. of Kentucky shortly after graduation from Notre Dame University in 1937. He subsequently served with General System operating companies in Wisconsin and Indiana, and later rejoined the Kentucky company. After serving as operating vice president of General Telephone Co. of the Southwest, he became president of General Telephone Co. of Upstate New York. In 1957, Mr. Sullivan became vice president—merchandising at General System headquarters in New York, and in 1959 was assigned broader responsibilities as vice president—Marketing

U.L. Approved
C.S.A. Approved



THE
NEW,
IMPROVED,
ALUMINUM
BOOTHETTE®

Look at these engineering advancements that prove why the BOOTHETTE® is such a long-lasting paystation installation.

Rust worries are banished . . . for all of the metal structure is 100% cast aluminum. Remember too, you save on freight costs with aluminum.

The ceiling gasket and light bracket have been redesigned to give a tighter, more secure fit. The dome is easier to remove when necessary to replace a light tube.

Another construction improvement in the back plate supporting the telephone gives additional security against phone theft. Greater strength has been added at this point through the use of thicker metal. Under actual tests, the phone could not be pulled loose from the back plate.

Gladwin's BOOTHETTE® (GP-2200) can be installed on any size pole or on any type wall. It is shipped completely assembled. For additional information or specifications, contact Gladwin today.

GLADWIN PLASTICS, INC.
165 COURTLAND ST., N. E.
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Area Code 404

and sales of General Telephone & Electronics Corp.

Mr. Lattin joined Northwestern Bell Telephone Co. shortly after World War I. He later served with the Ohio Bell Telephone Co. in sales and commercial positions, ultimately becoming general commercial manager. Mr. Lattin subsequently was named vice president and general manager, vice president-revenue requirements and business research, and vice president-public relations. He transferred to Southwestern Bell in 1948 as vice president-revenue requirements and in 1955 was named vice president-personnel.

Mr. Lattin retired from the Bell System in 1957 and subsequently joined the New York headquarters staff of the General System as vice president-consultant to the president. In 1958, he became president of General of California.

Clendenin Representative in N. C., Va. for Whitney Blake

Charles G. Cumpstone, sales manager, Whitney Blake Co., has announced the appointment of William E. Clendenin as sales representative in North Carolina and Virginia.

Mr. Clendenin succeeds James E. Heins who has been transferred to the company's headquarters in New Haven.

W. E. CLENDENIN

Mr. Clendenin was educated at Ohio State and Syracuse University. He served overseas in the European and Asiatic theaters, and participated in the occupation of Japan.

From June 1955 until the early part of this year, he was employed in various capacities by North Electric Co., spending the past three years in the sales department calling on the Indendent telephone industry.

Sommer Elected Controller Of GT&E Laboratories

The election of Robert H. Sommer as controller of General Telephone & Electronics Laboratories Inc. was announced on Apr. 4 by Dr. Herbert Trotter Jr., president. GT&E Laboratories is a research subsidiary of General Telephone & Electronics Corp.

Mr. Sommer previously was coordinator of manufacturing costs control for Sylvania Electric Products Inc., another GT&E subsidiary.

A native of Roslindale, Mass., Mr. Sommer served in the U. S. Navy as an aviator from 1943 to 1947. He graduated from Northeastern University in 1952 and received his master's degree in business administration from Boston University in 1956. He joined Sylvania in 1952 as a junior cost accountant in Newton, Mass., and subsequently held positions as supervisor of cost control in Woburn, Mass., and office manager in Hillsboro, N. H., before his transfer in 1959 to the corporate financial analysis department in New York.

Mr. Sommer is a member of the National Association of Accountants and is serving on the association's 1962 conference planning committee.

INTERNATIONAL TELECOMMUNICATIONS

Systems Planning

Federal Electric Corporation, prime contractor for Med-Tropo and Big Rally, is currently seeking communications specialists with maturity and ability to plan international communications systems.

We are now offering positions to senior engineering specialists who have a broad background in long lines and microwave communications and who are thoroughly knowledgeable of standard U. S. or European planning and operating specifications for large-scale telecommunication systems. A degree, a minimum of ten years' experience and proven ability to develop high quality, complex systems employing tropospheric scatter, microwave, radio and digital transmission systems engineered to advanced U.S.A.F. and international standards are our general requirements. Work requires world-wide liaison with various technical groups in the discussion and development of compatability objectives and operating parameters. We seek particular experience in Multiplex, Switching, Tropo-scatter, Microwave, Data Transmission and Power Systems.

For consideration and to arrange an interview, please send your resume to Mr. R. Hauserman, Professional Staffing, Dept. EL.

FEDERAL ELECTRIC CORPORATION

Service Division of International Telephone and Telegraph Corporation

Paramus Industrial Park, Paramus, New Jersey

An Equal Opportunity Employer.

SPACE COMMUNICATIONS

Concluded from page 15

legislation and with regulatory controls of the government;

"(8) Development of an economical system, the benefits of which will be reflected in overseas communications rates."

The *Ad Hoc* Carrier Committee unanimously felt that it would be possible to work out the necessary arrangements for a commercially operable space satellite communication system within the framework of President Kennedy's policies.

Government Ownership

Accepting the statement that a space satellite communication system is another means of long-distance communication, let us examine what could happen if the government ownership bill is enacted by Congress. First and foremost, the U. S. government, by owning and operating the means for transmitting long-distance communication services, would be providing carrier facilities which would compete with the facilities of private carriers in the communication industry!

Without launching into a technical discussion, it can be said that in general a telephone subscriber speaking over a space satellite system would be unable to tell the difference between the transmission qualities of that conversation and one carried over present systems. Think then of the problems immediately confronting an operating company if a large segment of its overseas or domestic long-distance traffic were to be handled by government-owned and operated facilities!

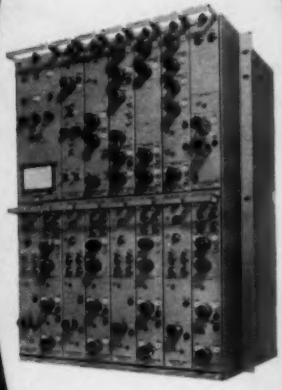
Essentially, the organization of a space satellite communication system should not present too many difficulties. On the other hand, a space communication program can become a morass of complexities, diverting arguments and side issues that could delay the entire program. President Kennedy stated that a space satellite communication system should be developed for global benefit at the earliest practicable time. Many people are currently working toward this end. Next week's article will touch upon some of these diverting arguments and side issues that could mean a costly delay in establishing a commercially operable system.

Blessed Freedom

In the final choice, a soldier's pack is not so heavy a burden as a prisoner's chains.—DWIGHT DAVID EISENHOWER.

LYNCH

"O"



CARRIER SYSTEMS

Lynch "O" Type carrier systems are designed to operate on an end-to-end carrier basis with Western Electric "O" terminals—operating levels and frequencies are identical. Lynch systems save money on installation and engineering. All units are self-contained and pretested at factory. Alarm facilities include automatic restore feature.

Contact your nearest Graybar representative ... or write for Bulletin B500-B510

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Contact your Graybar Representative or call us direct for complete information

7604

GOOD REPORT REFLECTS ABILITY

Concluded from page 20

Start at the beginning. Stop at the end. If your outline appears to be too thin, spend some more time on research. If it is too wordy, weed out the excess now.

Your rough draft should be just that: Rough. Your outline has filled your head with ideas. Let them tumble out as they present themselves. If you can't hit upon the exact word you want, leave it blank. Don't worry about spelling, you can correct it later. Don't impede the flow of thoughts. Get them down on paper.

Final Draft

The real work begins when your rough draft is finished. Ask yourself these questions as you read it over:
(1) If someone else wrote it, could I follow it?
(2) Am I telling the reader that he is stupid?
(3) What question would a person who is unfamiliar with my subject ask?
(4) Does it contain all the information the reader will need?

You'll probably do some rewriting, some rearranging, and a lot of cutting. Your reader will view misplaced paragraphs and cluttered sentences as a peek into the innermost workings of the way you think. Because your own mistakes are hard to see, it is a good idea to let a new report "cool off" for a while—at least overnight—and then pretend that you are the boss when you read it over the next time. Don't be afraid to kill your own "deathless" words. Get the non-working parts out of it.

Summaries and Introductions

A little skillful repetition will help fix the points that you want to make in the reader's mind. Use the lawyer's rule that says: "First tell them what you're going to tell them, then tell them, then tell them what you told them." It is another use for the introduction, the body and the summary of your report.

Your summary should contain a brief digest of your report and state your results and conclusions. The summary should be clearly labeled.

When your introduction and summary have been completed, graft them to the main body of your report and read the whole thing to get the "feel" of it. Edit as you go; shorten it where possible.

If you can, present your boss with a typewritten copy of your report. If you can't have it typed, at least make it legible.

The report you write is an extension of your personality. It can tell people you know your job, and that you could handle a more responsible one. Never forget the man who will read your report. Make his job easier by making your report readable.

Grant $54,215 Raise in Wis.

The Wisconsin Public Service Commission on Mar. 27 granted the Central State Telephone Co., Madison, a rate increase amounting to $54,215 annually. The company is planning to convert to dial its exchanges at Auburndale, Pittsville, Vesper, Junction City, Cranmoor, and Necedah.

The Self-Starter

A wise man will make more opportunities than he finds.—FRANCES BACON.

This new issue of Debentures is being sold to the general public by a group of investment dealers, including the undersigned. The offering is made only by means of the official Prospectus.

$50,000,000

General Telephone & Electronics Corporation

4⅞% Sinking Fund Debentures Due 1987

Price 100.25%
(Plus accrued interest from April 1, 1962)

You are invited to ask for a Prospectus describing these Debentures and the Corporation's business. Any of the underwriters qualified to sell securities in this State will be glad to give you a copy.

Paine, Webber, Jackson & Curtis — Stone & Webster Securities Corporation — Mitchum, Jones & Templeton

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April 6, 1962.

INTRODUCING A NEW CONCEPT
IN BUSINESS COMMUNICATIONS

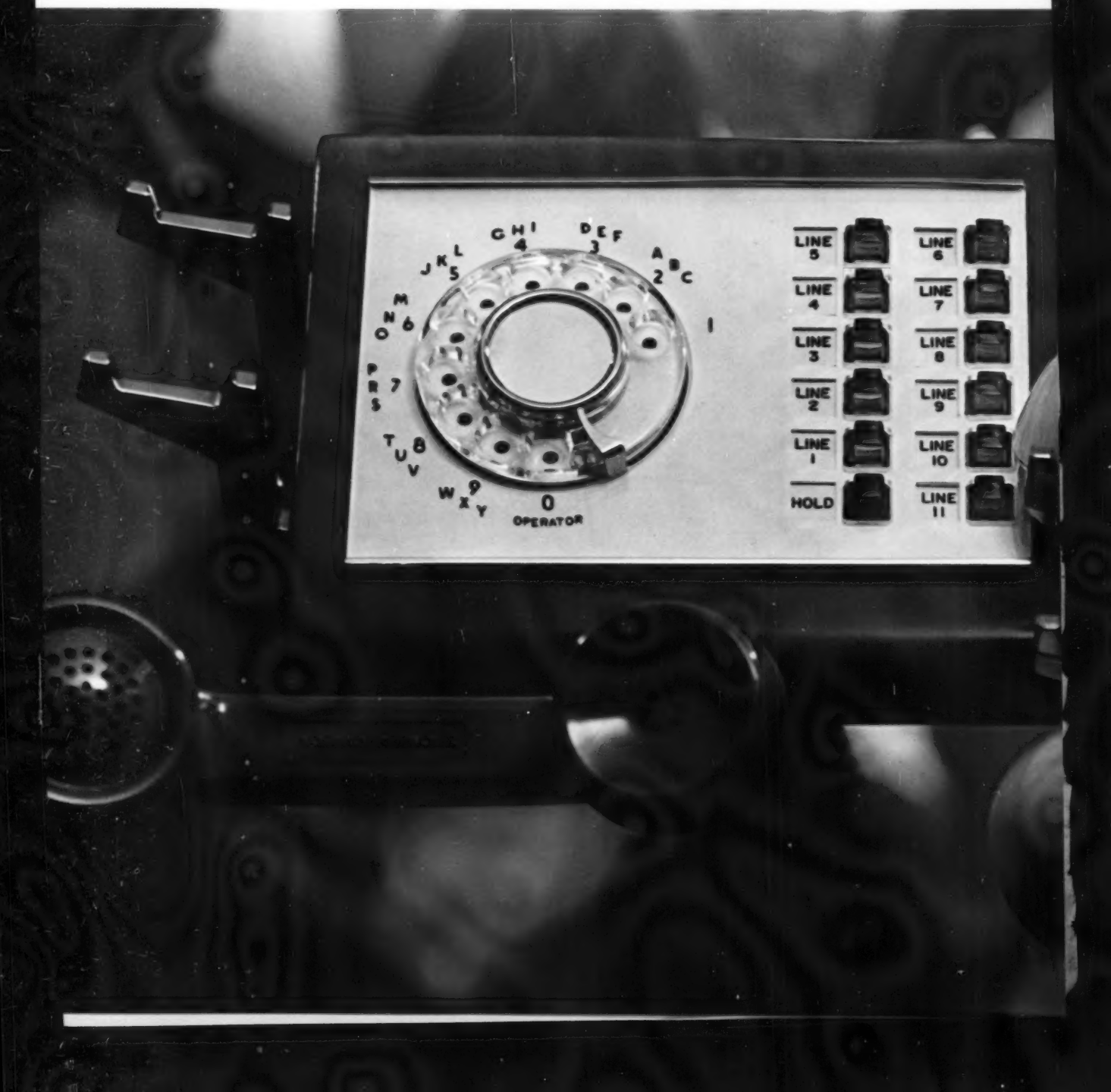
STROMBERG-CARLSON® 6K-1 SYSTEM

WITH THE NEW 1700 TELEPHONES

NEWEST, SMARTEST, MOST VERSATILE KEY TELEPHONE SYSTEMS

Modern offices need the unique services provided by the Stromberg-Carlson 6K-1 system and the ultra-modern 1700 series telephones.

The 1706 instrument is ideal where up to 5 C.O. lines are required; the 1712 instrument is recommended where up to 11 C.O. lines are needed. If the initial need is for 5 lines, with future expansion indicated, the 1712 telephone is installed. Then, when desired, simple additions put the second set of C.O. lines into service.



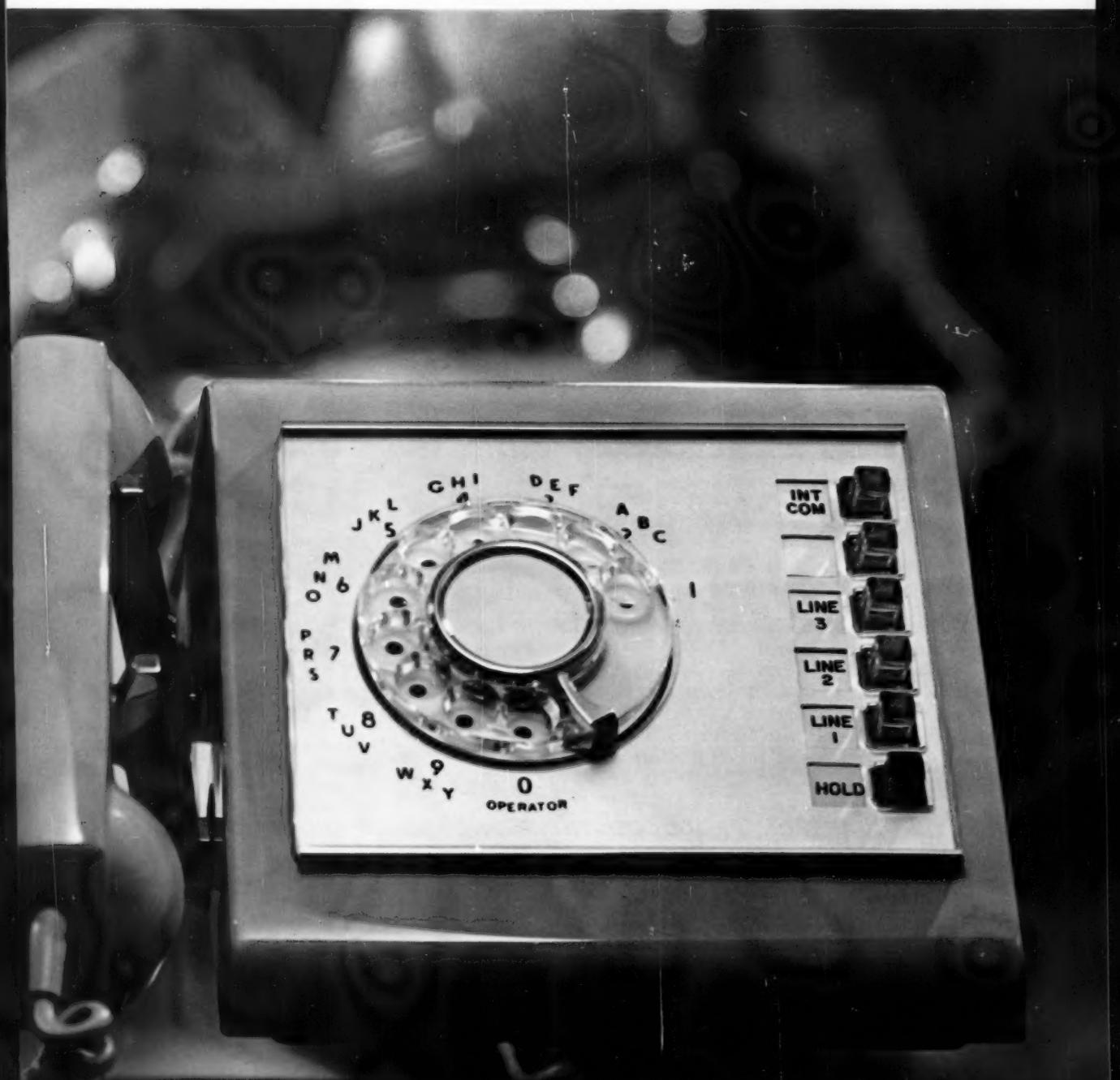
The turret-design 1700 series telephones are engineered with traditional Stromberg-Carlson high fidelity performance. They provide unmatched flexibility, coupled with the most-wanted service features . . . including push-button control! The trim lines of these new telephones say *functional beauty;* their operating features say *communications efficiency;* the Stromberg-Carlson name bespeaks *quality.*

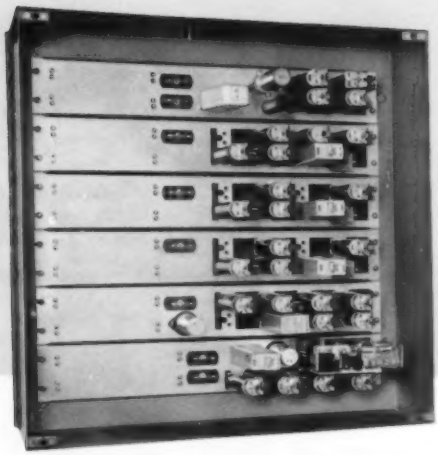
The phones are available in beige, gray or green.

THE NEW, ULTRA-MODERN 1700 SERIES TELEPHONES

- ***may be used interchangeably with 1575 instruments in any existing Stromberg-Carlson 6K-1 PBX System,***
- ***are completely compatible with other manufacturers' similar fixed-capacity key systems.***

WANT TO GET TECHNICAL?





THE 6K-1 RELAY CABINET

. . . with removable front cover, measures only 21" square and 7" deep. The stock cabinet provides for three C.O. line circuits, **factory-wired and equipped!** Basic wiring is included for additional lines, intercom signaling, tie-lines or other options to fit the needs of the installation. This exclusive packaging method makes Stromberg-Carlson 6K-1 equipment **the easiest wiring-plan system to install.**

THE STROMBERG-CARLSON® 6K-1 SYSTEM WITH NEW 1700 SERIES TELEPHONES

TECHNICALLY SPEAKING . . . this performance- and feature-packed key system puts a miniature switchboard right on the user's desk!

■ The basic 6K-1 system permits making and receiving outside calls, holding, signaling and transfer. Push-buttons on the 1700 series instruments light up; incoming calls are indicated by rapid flash; held lines by slow flash; busy lines by steady lamp signal.

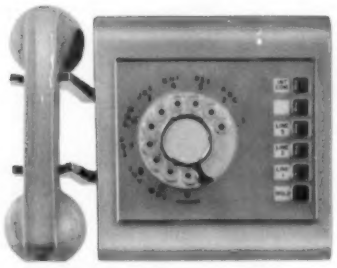
■ Manual intercom is a standard feature. Available options include dial intercom—for faster placing of internal calls; manual exclusion which allows selected personnel to converse in complete privacy; automatic tie-lines which permit linking of systems in different areas.

■ The 1706 phone features 5 line or special-use push-buttons, plus a sixth button for holding calls and for intercom.

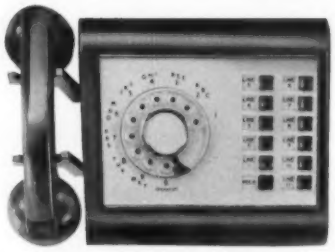
■ The 1712 phone provides 11 line or special-use push-buttons, and a button for holding and for intercom.

■ The 1700 series telephones are arranged for gong-ringer, buzzer, or tone-ringer as desired.

■ The telephones can be used interchangeably with conventionally-styled Stromberg-Carlson 1575 key phones. They are completely compatible with existing 6K-1 systems *—and with other manufacturers' similar fixed-capacity systems.*



STROMBERG-CARLSON 1706
Turret Dimensions: 7½" wide, 7⅞" deep, 4⅛" high. Beige, gray or green.



STROMBERG-CARLSON 1712
Turret Dimensions: slightly wider than the 1706. Beige, gray or green.

BEIGE GRAY GREEN

STROMBERG-CARLSON PRODUCTS: THE STANDARD OF QUALITY SINCE 1894

Your Stromberg-Carlson products representative will furnish full technical data and ordering information. In Atlanta, call: 875-7467; Chicago: STate 2-4235; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200; San Francisco: OXford 7-3630.

GENERAL DYNAMICS | TELECOMMUNICATION

T-2047/20M/462/GLP

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THE TRAFFIC PAGE

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qualified or authorized answer?

A. An employe or a member of the household or firm who could take a message or answer questions, or someone at an answering service would be qualified. Also, an answer by an automatic answering device is considered an authorized answer and completes a station call.

(4) Q. When an LD conversation has been interrupted and cannot immediately be restored, how should the charge be determined?

A. The service actually rendered should be charged for at the regular rate. However, if the customer has not received the equivalent of any normal service, no charge should be made.

(5) Q. To cancel a timing entry, should you scratch through the stamp?

A. If a completed timing entry is to be canceled, enter "CA" across the entry, and enter an explanation on the back of the ticket.

United Telephone Announces Promotion for D. W. Kaps

The promotion of Donald W. Kaps to assistant chief engineer of the United Telephone Cos. of Arkansas, Kansas and Missouri has been announced by J. K. Kreamer, president of the three Kansas City-based companies.

Mr. Kaps has been an engineer with United for nearly three years. He attended Ft. Hays State College and was graduated from Kansas University with a degree in electrical engineering. He served in the Air Force from 1951 to 1955. Mr. Kaps received a year of communications training at the Air Force school at Cheyenne, Wyo. He also was stationed at the Pentagon in Washington after two years in Germany.

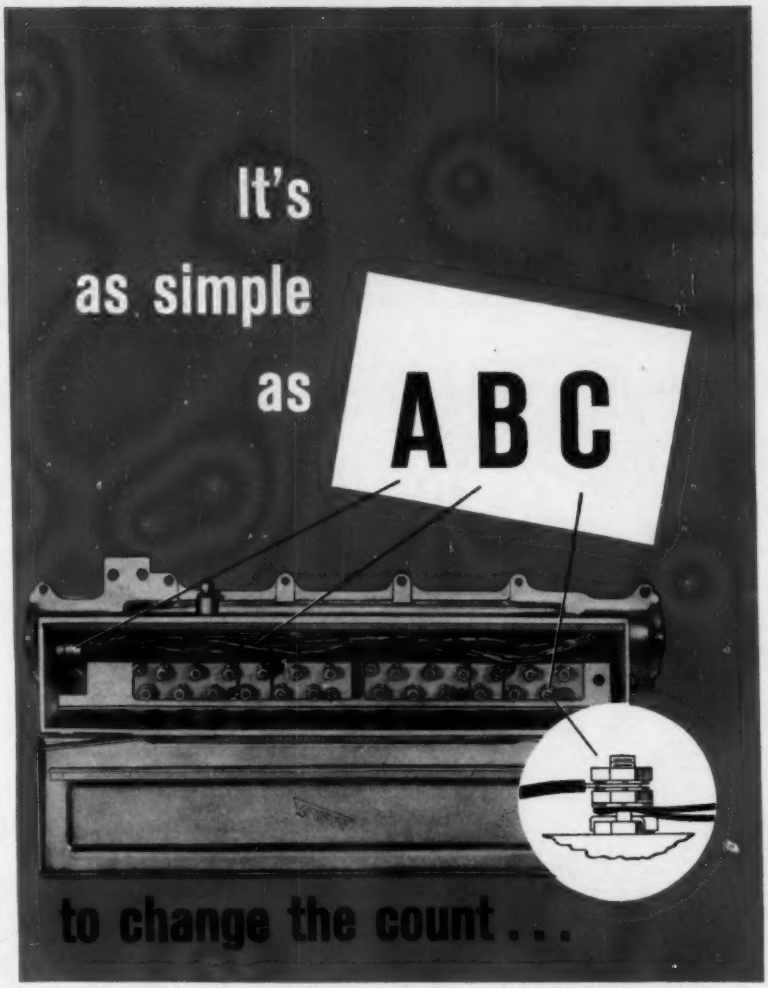
The Arkansas, Kansas and Missouri companies have 135 exchanges and 117,000 stations, and are part of the United Utilities System.

Canadian Company Plans Shareholder Offering

Maritime Telephone & Telegraph Co., Halifax, Nova Scotia, plans to issue 5 million dollars worth of common stock to be offered to existing shareholders.

Company president J. E. Richardson said the new stock will be offered to both common and preferred shareholders, probably on a one-for-seven basis.

The company's capital expenditures for 1962 are expected to total $9,950,000—the largest in its history.



Reliable's VARIABLE COUNT SPLICE CASE TERMINAL

is a pressure terminal with Ready Access features for use on lead, aluminum and plastic cable.

A The cable bundle consists of 26 fully color coded polyvinyl insulated pairs. The cleared ends are potted and sealed in a plastic cup.

B The gas-tight stub has sufficient slack so that splicing is unnecessary when changing terminal count.

C The terminal design, together with insulation piercing washers, permits changing the terminal count without opening the splice case.

Only the cable pairs used for services are terminated on the binding posts; the rest remain fully insulated. This eliminates unnecessary multiple pair appearances and helps maintain high insulation resistance.

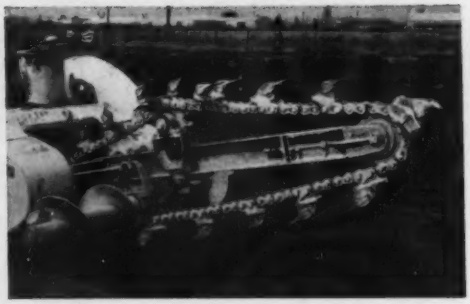
Variable Count Terminals are furnished with either 6 or 12 pair terminal blocks. Two terminals can be combined back-to-back to accommodate 50 pair connections with a maximum of 24 pair terminations.

Reliable
ELECTRIC COMPANY
Franklin Park, Illinois
A Symbol of Integrity Since 1909

Get more "DIG" for your dollar

WITH

PENGO
Trencher
Teeth



Performance-proved on thousands of PENGO Earth Augers the world over, PENGO "Wisdom Teeth" are available now for trenching machines of all types. They offer these profitable advantages:

EASIEST, FASTEST-TO-CHANGE TOOTH IN THE WORLD... with patented "Rubber Lock," you tap it on to **stay**—until you tap it off!

FASTER, SMOOTHER DIGGING... often permits operation in one gear higher, with less wear and tear on the machine; you get more footage per day at lower cost!

LONGER SERVICE LIFE... forged heat-treated alloy steel gives maximum abrasion resistance yet plenty of "toughness" to resist breakage. Teeth are reversible—they lead a double life!

PENGO Trencher Teeth and Holders are available now to fit all types of trenchers from light-duty "walk behind" to the largest ladder-type machines. Ask for new PENGO catalog TR-1; please specify make and model of your machine.

PETERSEN
ENGINEERING CO., INC.
Santa Clara, California
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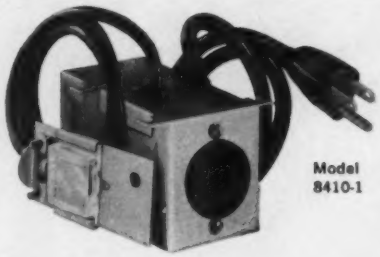
20

BOOTHS EARN MORE – PLANTS ARE SAFER with **PRECISION** PHOTOCONTROLS



Model 8410-1

J-2-275

M-4

Precision photocontrols pay for themselves — quickly — wherever telephone companies use outdoor lighting. This is a fact, proved by major companies on hundreds of thousands of installations.

Precision's UL-approved Model 8410-1 and Model 8410-2 booth controls turn lights ON at sunset, OFF at sunrise in all "compact" and standard Alcoa and Reynolds booths. One control, serving several booths, boosts revenues by as much as 400%!

Precision's Model J-2-275, available in 1800-3000 T ratings, also pays big dividends in safety and plant security for central stations, substations, truck and service depots. One control can save 3000 watt hours of energy per month in a busy service area. It can be used anywhere with the M-4 and 20 other Precision adapters.

Every Precision photocontrol is available in light level calibrations to your specifications — affording priceless public relations opportunities in "architectural lighting" that lets everyone know that "telephone service is close at hand around the clock."

Yet field-proven Precision controls cost less to buy and use than complicated, make-shift controls, because Precision produces the world's most advanced photocontrol circuit—2 components that trigger lights unfailingly every sunset and sunrise.

Write for data and quotations.

PRECISION MULTIPLE CONTROLS, INC.
Ridgewood, New Jersey
THE DIFFERENCE BETWEEN NIGHT AND DAY

REA LOANS

Continued from page 32

These funds will help enable the Ritchie company to provide new service for 153 subscribers, and to complete the system authorized under prior loans. Facilities required to serve the subscribers include additional central office equipment. The borrower plans service without toll charge among its five exchanges.

REA loans to this borrower will help enable it to bring new and improved service to 2,295 subscribers. Three of the proposed five exchanges of the system are now in operation.

•

Wikstrom Telephone Co., Karlstad, Minn.; $397,000; Mar. 22.

Wikstrom intends to use these funds to improve service for 364 subscribers and furnish initial service to 213 subscribers. The borrower also proposes to acquire the Two Rivers Telephone Co., now furnishing magneto service to the subscribers. The Two Rivers system consists of exchanges at Lancaster and Lake Bronson.

New dial offices are planned to replace the Lancaster and Lake Bronson switchboards.

REA loans to the Wikstrom Company will help make possible new and improved service to 2,886 subscribers. Six of the proposed 12 exchanges are now furnishing dial service to approximately 2,100 subscribers.

•

Poka-Lambro Rural Telephone Cooperative, Tahoka, Tex.; $660,000; Mar. 23.

These funds will help enable the cooperative to furnish initial service to 609 subscribers. Facilities required include expanded central office equipment.

Provision also is made in the loan for remodeling the headquarters building and for additional toll trunk lines.

REA loans to Poka-Lambro will help make possible new and improved service for 3,143 subscribers. The 15 exchanges of the system are all in operation, serving approximately 2,300 subscribers.

•

Colorado Valley Telephone Cooperative, La Grange, Tex.; $392,000; Mar. 23.

The company intends to use this loan to furnish initial srrvice for 353 subscribers and to improve service for 92 subscribers.

In order to provide the additional service, the company proposes to pur-

chase sites and construct new dial central offices at High Hill and Moravia. In addition, a new combined commercial office and warehouse building will be constructed at La Grange.

REA loans to this borrower will help make possible new and improved service to 1,422 subscribers. The Hostyn, Plum and Warrenton exchanges now furnish dial service to approximately 575 subscribers. The remaining three exchanges are not yet cut over.

•

Four States Telephone Co., Brownwood, Tex.; $164,000; Mar. 23.

Four States has allocated these funds to help improve service for 107 subscribers and furnish initial service for 205 in Louisiana. The company proposes to acquire the Starks exchange from the Southwestern States Telephone Co., the acquisition to be made through issuance of the Four States' common stock.

The company plans to construct a new and larger dial central office replacing the existing building at Starks.

Loans to Four States will assist the company in bringing new and improved service to 5,729 subscribers in Texas, Arkansas and Louisiana. Approximately 2,280 subscribers now receive dial service through 12 of the proposed 19 exchanges.

Atlantic Research Corp. Forms Teleproducts Group

Atlantic Research Corp. announced on Mar. 19 the formation of a teleproducts group with responsibility for the development and production of the company's data communications and

G. C. PIERCE

telegraph equipment. The new group status given this operation reflects the increased emphasis the company is placing on the fast growing digital communications industry. The organizational change will permit faster re-

Better than Ever ...and Any!

- King Size capacities
- Digs to 5½' deep - 18" wide with no costly changeover
- Reversible conveyor - deposits dirt on either side of trench - no spill back.
- Absolutely straight - line trenches - no side thrust.
- Fingertip control - you see trenching progress at all times.
- Accurate depths via precision hydraulic control valve.
- Safety transport lever forward or reverse movement without gear shifting - no accidental "runaway".
- 46,000 # tensile strength chain compared to 28,000 # of competitive units.

ARPS MODEL L-12 TRENCH DEVIL

Write for free brochure detailing the ARPS L-12 Trench Devil or Model M-A2 Trench Devil for smaller capacities

ARPS CORPORATION DEPT. T
NEW HOLSTEIN, WISCONSIN
Trenchers • Half-Tracks • Dozers • Utility Blades

GENERAL MACHINE PRODUCTS COMPANY, INC.
Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.

C-R POWER REEL

SLACK PULLER

CABLE FEEDER

GMPCo

AERIAL TENTS
CABLE BENDERS
CABLE BLOCKS
CABLE LASHERS
COAXIAL CABLE TOOLS
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Distributed by GraybaR ELECTRIC COMPANY

PRESSURE TESTING KIT

COMPOUND

B, C, D, E, & G CABLE LASHERS

Special Purpose Tools to Specifications — Catalog on Request

Over 600 various items of Line Construction Tools, Maintenance & Pressure-Testing Equipment in stock for immediate shipment

WIRELIABILITY *

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One of the key factors in the production of quality wire and cable here at Whitney Blake is our rigid quality control program.

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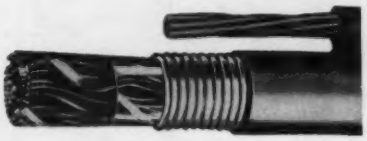
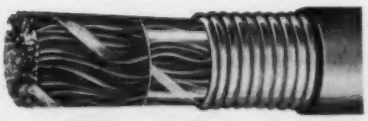


FIGURE 8 —
EXCHANGE AREA

Easy to install, as messenger is an integral part of the cable assembly. Offers the same service-free performance as all other WB Telecable.



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T-6 . . . Telephone Wire and Cable
T-8 . . . Figure 8 Distribution Wire

sponse to customer requirements as well as further efficiencies in development, production, and service, Atlantic states.

The newly formed group will be under the direction of George C. Pierce, who joined the Atlantic research staff in 1952 and was the former assistant director of the Electromechanical Division. Mr. Pierce graduated in 1952 from the Massachusetts Institute of Technology with a B. S. degree in economics and engineering. Frank D. Baxter has been named chief of production and production engineering. Engineering and development are the responsibility of Harvey N. Stanley. Marketing will be handled by Charles M. Gray of the company's development department.

The group, comprised of 50 staff members, will initially give particular emphasis to the company's telegraph and data transmission distortion measuring equipment and data monitors.

According to Mr. Pierce, an announcement will be made soon regarding two new products. One is described as an inexpensive data quality monitor series. The other new product is to be a series of start/stop telegraph transmission measuring sets.

The group is well into production on its pocket-sized distortion measuring set and an alarm system to pinpoint trouble in switched trunk lines carrying data signals. Current development activities include data signal regenerative repeaters, coded character recognizers, teleprinter selector magnet drivers, and equipment to align telegraph carrier channels.

KENTUCKY CONVENTION

Concluded from page 22

ment on companies' functions as soundly managed, privately financed, public utilities.

He stated: "By refuting the unfair label of 'second class' telephone companies, a stigma born of ignorance and obscurity, we have given our people a sense of belonging and respect. And, may I add that many of our companies consider this 'industry prestige' factor of equally great importance in dealing with city councils and state commissions."

The final objective of the program, in addition to those mentioned above, is, Mr. Roberts stressed, to emphasize again and again the fact that Independent companies form an indispensable part of the nationwide telephone network—and that, without them, nationwide telephone service could not exist as we know it today.

Also speaking at the convention was Senator Thruston B. Morton (R., Ky.). Senator Morton, in his talk, outlined the functions of communications satellites.

He also spent some time reviewing the tax structure as it relates to the communications field, including depreciation rates on telephone properties.

The meeting's morning session was devoted to four workshops—commercial, plant, traffic and accounting.

The following were elected as directors: W. R. Bacon of Shepherdsville, D. B. Corman of Glasgow, A. L. Daughters of Covington, Percy L. Finks of Mayfield, P. H. McCrory of Louisville, F. C. Rahdert of Lexington, Gordon Saunders of Lexington, W. W. Thomason of London and L. T. Utz of Florence.

New officers are: President, Mr. Utz; vice-president, Mr. Saunders; vice president, Mr. Thomason and secretary-trerasurer, Arthur F. Boyd of Lexington.

Sen. Thruston B. Morton, of Kentucky, being welcomed to the Kentucky Telephone Association Convention at Lexington by F. C. Rahdert, president of General Telephone Co. of Kentucky.

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Five Vice Presidents Elected At AE Sales Corporation

As a result of the merger of Leich Sales Corp., Chicago, into Automatic Electric Sales Corp., Northlake, Ill., five men have been elected vice presidents. They are: William S. Gage, vice president, Communications Products Division; Carl W. Schwob, vice president, Supply Sales Division; Harrison C. Smith, vice president and field sales manager, Communications Products Division; Thomas E. Smith, vice president, Industrial Products Division; and Keith A. Regel, vice president, Marketing Services Division.

W. S. GAGE

C. W. SCHWOB

Mr. Gage, who joined the company in 1948, has been manager of the Marketing Services Division. He started his career with AE Sales as assistant to the commercial manager and was appointed supervisor of the pricing division in 1951, assistant manager of carrier and radio sales in 1952, and manager of supply sales from 1954 to 1958. A graduate of Northwestern University with a B.S. degree in mathematics, Mr. Gage took postgraduate work in accounting and business administration at Northwestern. He spent three years in the Air Corps, serving as a radio operator and a member of an aerial combat crew on duty in the European Theater during World War II.

H. C. SMITH

T. E. SMITH

Mr. Schwob joined AE Sales in 1945, and served as manager of supply sales until 1953. Since that time he has been a district manager of Leich Sales. During World War II, he was a captain in the Air Corps, and flew 25 combat missions as bombardier and navigator, earning the Distinguished Flying Cross.

H. C. Smith, who joined Automatic Electric in 1924, held installation and operating assignments in various parts

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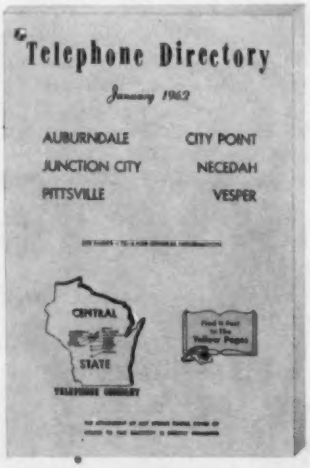

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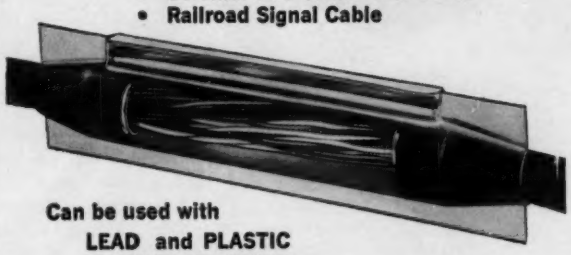

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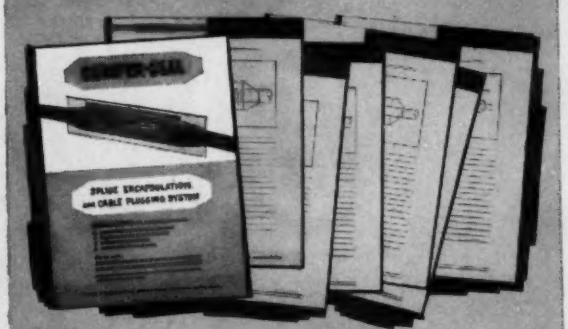

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of the country until 1934, when he joined the sales organization. In 1943, he was named vice president of Automatic Electric Sales, in charge of the Pacific Coast district. He returned to the Chicago office in 1953 as vice president and manager of industrial sales, and became vice president of the Communications Products Division in 1959. Mr. Smith studied business administration at the University of Chicago.

T. E. Smith joined AE in 1948, and served in production, engineering and administration for two years before becoming export division manager for South America, at AE International in Chicago. In 1952, he was assigned to the company's New York headquarters as staff engineer. He returned to the general office in Chicago in 1954, serving in carrier and radio sales, and in 1955 was named sales manager for the East Central district; in 1959, he became manager for the Eastern district. Mr. Smith earned an electrical engineering degree at Northwestern University.

Mr. Regel has been manager of the company's Pacific Coast district since 1953. A native of Iowa, he studied electrical engineering at Iowa State College, worked for Postal Telegraph Co., and subsequently held positions in Omaha and Chicago, working with

K. A. REGEL

independent telephone companies in the Midwest. He joined AE in 1941. During the years of World War II, he served as government contract service manager. He later became executive assistant to the president of AE Sales, and in 1948 was appointed manager of industrial sales.

Automatic Electric and Leich are subsidiaries of General Telephone & Electronics.

L. M. Berry Receives Award As Distinguished Citizen

Loren M. Berry, head of the L. M. Berry Co. of Dayton, O., was the recipient of the Distinguished Citizen

L. M. BERRY

Award granted by Ohio Wesleyan University, Delaware, O., at a private lunch in the governors' suite at the Surf Club, Miami Beach, Fla., on Mar. 17.

Among the guests present in addition to Mrs. Berry, were Mr. Berry's mother, Mrs. Elizabeth Berry who will be 102 years old May 27, and Miss Lois Harbage of Toledo, O., a member of the board of trustees Ohio Wesleyan.

The presentation was made by Mrs. Glee H. Murray, assistant to the vice president in charge of university relations at Ohio Wesleyan. The award was voted to Mr. Berry by the trustees and faculty of the institution in recognition of his interest in higher education and in other causes related to human welfare and advancement.

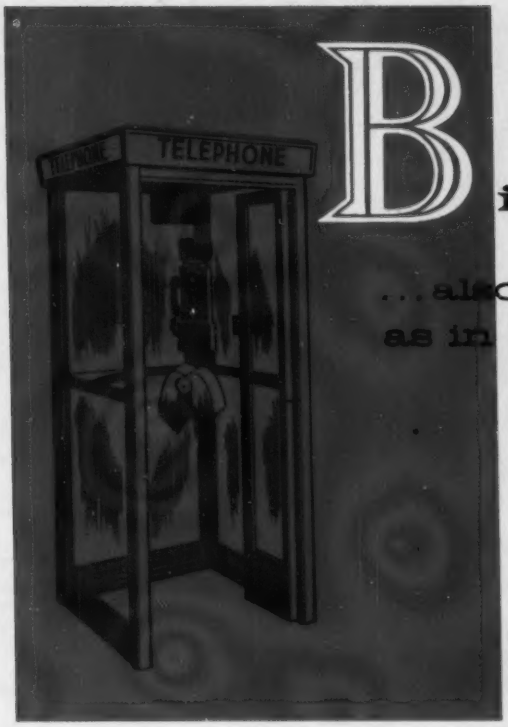
Mr. Berry is a winter resident at the Miami Beach Surf Club.

Ashford Joins Lenkurt As Senior Product Engineer

Donald A. Ashford has rejoined Lenkurt Electric Co., Inc. in San Carlos, Cal., as a senior staff engineer in product planning.

Mr. Ashford, who reports to Gerd D. Wallenstein, vice president-product planning, is evaluating the commercial application of electronic techniques to the transmission of digital data over telephone networks.

He first became associated with Lenkurt Electric in 1958, and was assigned to product planning. He participated in development of the AN/FCC-17,



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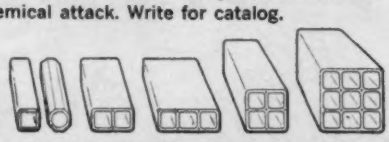

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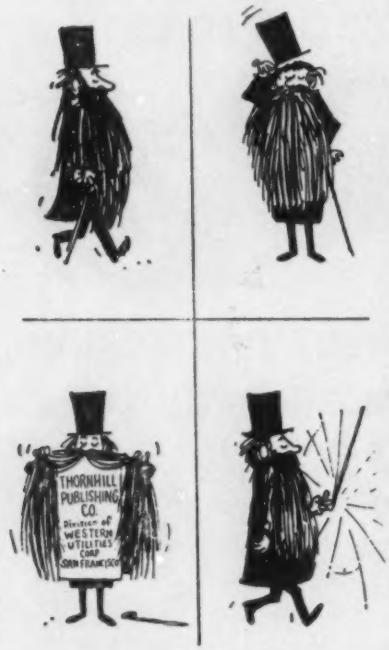

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In August, 1959, Ashford left Lenkurt Electric to take the position of manager of systems engineering for the ITT Kellogg Co. in Raleigh, N. C. He was assigned to commercial carrier and microwave communications equipment.

He returned to the West Coast last June after joining General Telephone & Electronics Laboratories, Inc., and was assigned to Lenkurt Electric's Advanced Development department. He later transferred from GT&E Laboratories to Lenkurt Electric.

Mr. Ashford received the B.E. degree in 1948 from the University of Sydney at Sydney, Australia, and came to the U. S. in 1956.

He is a Senior Member of the Institute of Radio Engineers.

F. L. Kahn Retires from AE with 38 Years of Service

Frederick L. Kahn, chief telephone engineer at Automatic Electric, retired on Mar. 31 after 38 years with the company.

Mr. Kahn has specialized in automatic switching, and holds a number of patents on telephone switching systems improvements. Born in Germany he studied at the University of Frankfurt and Institute of Technology in Berlin.

He began his association with Automatic Electric as an equipment engineer, and has held supervisory positions in systems analysis, cost studies, equipment engineering, and circuit design. In 1959, Mr. Kahn became director of telephone switching systems development, and in 1961 he was named chief telephone engineer.

In 1960, he was the recipient of Automatic Electric's highest honor, the Talbot G. Martin Award, presented

F. L. KAHN

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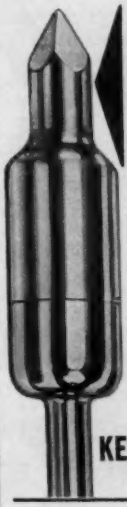

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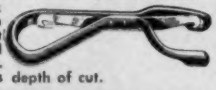

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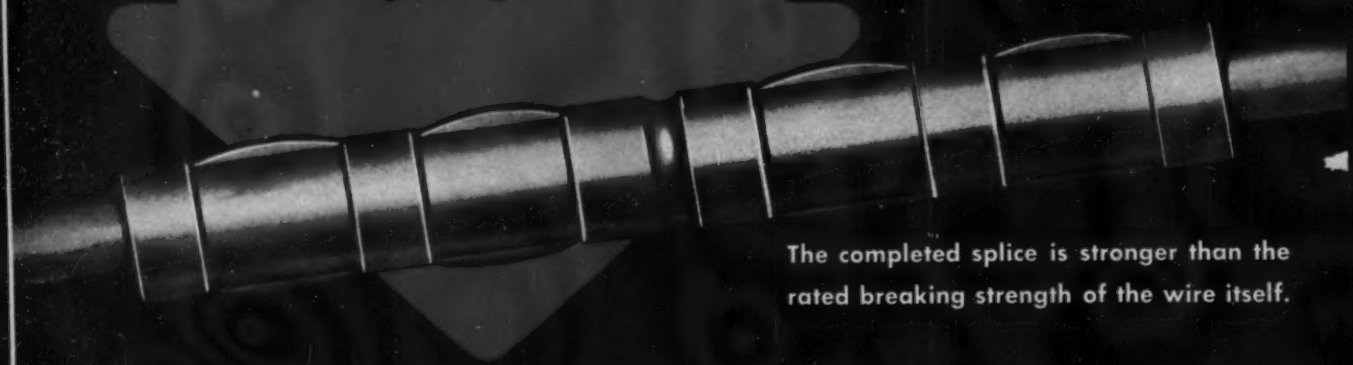

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